

WORKSHOP
STATE OF CALIFORNIA
ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF TOXIC SUBSTANCES CONTROL
PROPOSED REGULATION OF MERCURY CONTAINING WASTES

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1 PROCEEDINGS

2 DIRECTOR LOWRY: Well, good morning. My name is
3 Ed Lowry. I'm the Director of the Department of Toxic
4 Substances Control. Welcome to the Central Valley
5 Auditorium and this mercury public workshop. I will have
6 a few remarks to kick things off here.

7 But before we do that, if Diane Fowler could
8 cover a few housekeeping things.

9 PUBLIC PARTICIPATION SPECIALIST FOWLER: Good
10 morning. The restrooms are -- can everyone hear me?

11 There'a couple announcements. For those of you
12 who have not found them yet, the restrooms are off to
13 either side, and there are refreshments downstairs. We
14 have a list of restaurants for lunch at the back table.
15 We also have the agenda if you have not picked one up.
16 And if you would like to speak this afternoon, if you are
17 not one of the panelists, we do have speaker request
18 forms, if you could fill these out and turn them into me,
19 I'd appreciate that.

20 We have three panelists. The first will be the
21 various boards of the State of California. The second
22 panel will be our environmental organizations and they
23 will be presenting information. And this afternoon we
24 have various speakers from industry.

25 And with that, we'll get started.

1 Ed.

2 DIRECTOR LOWRY: All right, thank you. That was
3 a good way to start off by saying "um".

4 Let me talk a little bit about the purpose of
5 this workshop. This is designed to provide a forum for
6 discussion and feedback on some concepts for changing the
7 mercury regulatory threshold, or other wise changing the
8 way we regulate mercury waste within this State.

9 It has, as its endpoint, thoughts of putting
10 together a regulation based on one or more of the
11 recommendations in the report or something completely
12 different from the report. And by that I mean in the
13 regulatory context I think there is a perhaps well founded
14 belief that by the time you actually have a reg package
15 out there and public hearings officially on the
16 regulations, it is too late for anyone to come into the
17 process and actually change what the governmental
18 organization is doing about the regulation.

19 So with that in mind, what I asked staff at DTSC
20 to do is to put out a report with recommendations and then
21 invite the public, the regulated community and everyone
22 else interested to comment on that report before anyone is
23 in entrenched in one particular viewpoint as to what
24 direction we should go, if any.

25 And that's what you have here. There are copies

1 of the report on the back table, and we also have it on
2 our web site, which is easily downloadable in two
3 segments.

4 As part of this hearing we have asked folks that
5 we know who have a stakeholder interest in the process to
6 come testify, and by testify I mean to offer comments on
7 the report. And it may turn out to be an interactive
8 process. I may be able to or may want to interject and
9 ask questions for clarification and so forth. We'd like
10 to maintain as collegial an atmosphere as we can during
11 this process, and I have staff here as well to listen to
12 the comments that you all are going to give.

13 We have court reporters here for probably two
14 reasons. One so that we and the staff can review what is
15 said, and, two, we will be posting a transcript of what is
16 said here on our web site to give broad dissemination of
17 what happens here today.

18 In addition, we're holding two other public
19 hearings throughout the State or in other places in the
20 State later in December, which will address the report.
21 Are there two other meetings, I think it is.

22 MS. YEP: There are two next month and one in
23 January.

24 DIRECTOR LOWRY: All right. There are two next
25 month and one in January.

1 The objective of our current mercury effort is to
2 promote pollution prevention, to encourage recycling and
3 to enhance the use of mercury alternatives and discourage
4 land disposal. And as you can see the recommendation of
5 this report does that by redefining the hazardous waste
6 identification criteria for mercury.

7 We are endeavoring to provide additional
8 safeguards from mercury environmental loading from mercury
9 containing waste, which is what we regulate. Now, there
10 are different roles and responsibilities of State agencies
11 with respect to mercury which probably are not covered in
12 detail in the report, but since we have people here from
13 these other agencies, I thought I might briefly state what
14 they are.

15 As you know, DTSC, the Department of Toxic
16 Substances Control, regulates hazardous waste. It
17 encourages pollution prevention, and it is the Agency's
18 primary, although not exclusively, responsible for
19 overseeing cleanups of sites which are contaminated with
20 hazardous waste.

21 The Office of Environmental Health Hazard
22 Assessment, or OEHHA, is also here and they are an
23 organization which has issued fish advisories and human
24 health standards for mercury. The Water Resources Control
25 Board, both the State Board and the regional water quality

1 control board protect beneficial uses of water and are
2 responsible for establishing total maximum daily loads, or
3 what in the business are called TMDLs.

4 The Air Resources Board deals in this context
5 with mercury emissions in the air. Not speaking today,
6 but the Department of Fish and Game is an essential
7 partner in our efforts to protect the public health and
8 safety from mercury. They collect information from OEHHA
9 to determine whether fish advisories are necessary in the
10 waters of the state.

11 The Department of Health Services oversees
12 drinking water criteria and sets maximum concentration
13 levels.

14 The California Integrated Waste Management Board
15 is responsible for managing nonhazardous waste at many
16 many disposals sites throughout the State.

17 And we have local environmental agencies, often
18 referred to as KUPAs, who are responsible in large part
19 for implementation of a number of environmental laws and
20 regulations, some of which relate to mercury.

21 There are several highlights in the report which
22 I just want to address a couple. It recognizes and
23 identifies that mercury as a persistent and toxic
24 pollutant. It bioaccumulates in the environment and in
25 the food chain.

1 And for that reason we have had fish advisories
2 which exist in many of our recreational waters to the
3 point that you can't eat the fish, which live, grow and
4 reproduce in many areas of the State.

5 The largest source of mercury is legacy waste
6 from more than 300 abandoned mines along the California
7 Coast Range and in the Sierra Nevada, and in the mountains
8 up north. And these have a tremendous impact on the
9 mercury load in the water.

10 We also have mercury uses in common household and
11 industrial products including batteries, paints, and other
12 consumer goods. These uses have been reduced or
13 eliminated and further restrictions are under
14 consideration.

15 We also have mercury in fluorescent tubes.
16 Everyone of the tubes that is above us in this room have
17 small quantities of mercury in them, which enable us to
18 see what we're doing.

19 We believe our effort here is consistent with the
20 latest legislative efforts, other State efforts and
21 national efforts. And just to mention one, Senate Bill
22 633 passed in the last legislative session and signed by
23 the Governor, prohibits the sale of some novelty items
24 with mercury, requires one to have a prescription to
25 purchase a fever thermometer, and encourages the removal

1 of mercury switches from automobiles. That's covered a
2 little bit in our report.

3 Some other facts which I think are interesting to
4 note, the mercury in one fever thermometer is enough to
5 contaminate more than 200 million gallons of water.

6 There are accurate and safe alternatives to
7 mercury fever thermometers that are readily available and
8 comparable in cost. We have an estimated 130 to 180 tons
9 of mercury in the hood and trunk switches of automobiles
10 currently in use or at automobile recycling yards
11 throughout the United States.

12 And mercury from consumer products can enter the
13 environment and ultimately the states waterways directly
14 through vaporization or spillage which broke during use,
15 transportation or disposal. The Environmental Council of
16 the States, of which our Secretary, Winston Hickox, is a
17 member, has passed resolutions regarding mercury and is
18 encouraging states to look at the best ways to regulate
19 mercury pollution.

20 The conclusion or recommendation in the report is
21 that we can control additional mercury loading into the
22 environment by changing the mercury hazardous waste
23 identification criteria, which will promote pollution
24 prevention and recycling and the use of mercury
25 alternatives and it will also discourage land disposal,

1 and therefore enhance the public health and safety in the
2 environment in the State of California.

3 Let me reiterate here today that we are
4 interested in your input. We want to have a dialogue as
5 to what you think about it, what's the best way to go. We
6 will have other public hearings as I mentioned, and we
7 welcome additional submittals, which can be mailed to us
8 at Post Office Box 806, Sacramento, 95812-0806. And, as I
9 said earlier, we will have a transcript on our web site.

10 Our first presentation will be by Ms. Corey Yep,
11 which is sitting to my right. She's in the Hazardous
12 Waste Management program with the Department, and is the
13 primary author of the report that you have.

14 To my left is Watson Gin the Deputy Director for
15 our Hazardous Waste Management Program, and he may be
16 asking questions, whispering into my ear or tickling me if
17 I say anything silly.

18 So, Corey, if you would start with your
19 presentation.

20 (Thereupon an overhead presentation was
21 presented as follows.)

22 MS. YEP: Okay. Can you all hear me?

23 Thank you for coming today. We really appreciate
24 your time here and coming today and participating in this
25 public workshop.

1 As Ed said, my name is Corey Yep and I've acted
2 as project manager for the Department's proposed
3 regulation of mercury containing waste. And this is the
4 Department's most current effort in regards to controlling
5 mercury entering the environment.

6 Our objective in this project is to promote
7 pollution prevention, recycling, and the use of mercury
8 alternatives by redefining how and when we identify
9 mercury as a hazardous waste. This will ultimately
10 provide additional safeguards from further mercury
11 entering the environment. And over time we should see an
12 environmental improvement by seeing less discharges to the
13 air, water and land.

14 The draft mercury report, as Ed has mentioned, is
15 available on our web site, and it's back there on the
16 table today. And what it does is it lays the base
17 foundation for us to move forward with regulations. The
18 draft mercury report was truly, truly a team effort. And
19 I'd like to recognize the co-authors at this time.

20 Andre Algazi and John Low, you can stand or raise
21 your hands or something. And so, like I said, it was
22 truly a team effort. And I'd also like to recognize the
23 many, many individuals in our division program for
24 gathering and compiling data for the report, as well as
25 those people from our sister agencies who also reviewed

1 the draft mercury report and made comments and which have
2 been reflected in what you see today on our web and the
3 back table.

4 --o0o--

5 MS. YEP: At this point in our project we are at
6 the public workshop phase and we are here to create that
7 type of dialogue as Ed alluded to with interested parties
8 on our options that are in the draft mercury report for
9 the proposed mercury containing waste.

10 There are four workshops scheduled statewide.
11 This being the first, two more in December, Oakland and
12 Fresno and -- I'm sorry Oakland and LA, and then in
13 January it will be in Fresno.

14 And, again, our purpose for these workshops is to
15 gather additional information data from the regulated
16 sector as well as environmentalists and other regulatory
17 agencies.

18 --o0o--

19 MS. YEP: Just kind of a quick review of what
20 mercury is. Mercury is a persistent bioaccumulative
21 substance. And the form that we're most concerned about
22 in bioaccumulation is methyl mercury. It does
23 bioaccumulate in fish and humans who consume fish, which
24 is our primary exposure route.

25 Some of the uses that are of mercury, they're

1 used in all kinds of devices. As you can see in the
2 picture, these are mercury switches, and different types
3 of mercury switches. It's also been used in the past as a
4 bactericide, fungicide and insecticide. It's still being
5 used in some pharmaceutical products.

6 It's still being used in industrial processes.
7 It's used in Chloroalkalide plants. And, of course, we
8 all know we have them in them in our mouth in amalgams.
9 And although there are some restrictions on batteries and
10 how much mercury is present in batteries, it still is
11 present in batteries.

12 --o0o--

13 MS. YEP: Some of the State and national efforts
14 going on. Water quality criteria, the TMDLs that the
15 regional water and State water boards are overseeing, it's
16 not only a California effort, it's also a nationwide
17 effort. Mercury is a toxic air contaminant, which is
18 overseen by our California Air Resources Board.

19 And again this is just not a California air
20 contaminant. It's a national contaminant.

21 Fish consumption advisories, we have a lot of
22 them in California, but not only in California they exist
23 nationwide. And as far as Ed has mentioned, we have our
24 Senate Bill 633, which in California is now making
25 restrictions and bans on mercury-containing products and

1 their availability in the consumer market, while these
2 efforts are also going on nationwide, especially in the
3 north -- I'm sorry, in the New England area.

4 So our efforts today are very consistent with our
5 sister agencies, other State agencies as well as other
6 states and national efforts. And you can find a more
7 complete list of the other national efforts in our report.

8 --oOo--

9 MS. YEP: So how did we start off this mercury
10 and hazardous waste and what's that criteria now? Well,
11 in 1977 the Department was charged by the Legislature to
12 develop hazardous waste criteria. And in 1977 guidelines
13 were initially drafted.

14 And I'd like to point out today that Bart Simmons
15 is here. He's Mr. CAM. In 1978 they drafted up the
16 California Assessment Manual, and those who've been in
17 this field for awhile know it as the CAM and he's Mr. CAM.

18 In 1982, we did go out with public workshops just
19 like we're doing today. In 1984 those regulations were
20 finalized. That was 17 years ago. I have a kid 17 years
21 old coincidentally. And just as I look forward for my
22 child to grow up to be an independent adult, we're looking
23 forward for the next stage of these regulations and taking
24 a look at how we can change that mercury hazardous waste
25 criteria to promote pollution prevention, recycling and

1 the use of mercury alternatives and substitutes.

2 --o0o--

3 MS. YEP: Just to give you an overview of our
4 report. It does provide an overview and a base foundation
5 for this proposal. And it provides information on mercury
6 in the environment, the existing standards for the
7 environmental -- the important forms of mercury in the
8 environmental and public health issues, some basic
9 information on the mercury chemistry and toxicology.

10 It talks about the global mercury cycle, the
11 sources of mercury in the environment, some of the common
12 uses of mercury and the alternatives available, and it
13 provides an assessment of the waste contribution to the
14 mercury and the environment. And also it provides options
15 on how the Department can control these sources of mercury
16 in the environment, and that's also why you're here today
17 is to provide us that input.

18 --o0o--

19 MS. YEP: So what is our correct criteria? Well,
20 one is a Soluble Threshold Limit Concentration or the
21 STLC. And It uses a waste extraction test. If you take
22 some waste, you take it to the laboratory, they subject it
23 to a waste extraction test, which simulates what's
24 happening in the landfill in the laboratory environment.

25 If it exceeds .2 milligrams per liter, we

1 consider it a hazardous waste, and therefore it falls into
2 our realm of regulation. We also have what's called a
3 Total Threshold Limit Concentration. Not only do we
4 identify in California what is the hazardous waste, what's
5 being potentially leached out into the waste, we also
6 regulate what's hazardous waste by its total amount of
7 mercury in the waste, and that regulatory threshold is 20
8 milligrams per kilogram.

9 --o0o--

10 MS. YEP: Well, at the federal level, there are
11 also criteria that apply to mercury, and they have what's
12 called a Toxicity Characteristic Leaching Procedure.
13 Coincidentally, it's the same regulatory threshold, but
14 it's a slightly different method to arrive at -- to derive
15 what's potentially going to be leached in that waste.

16 They also have what's called listed waste. And
17 here we have what we call the commercial chemical
18 products, and they like to letter or number their wastes.
19 And the mercury is U151. And they also have industrial
20 process waste, that's specifically waste from mercury cell
21 processes in the chlorine production.

22 So if the waste meets this description by virtue
23 of it being on this list, no analysis is necessary. It
24 doesn't need to be sent to a lab, and it automatically
25 falls into a category of a hazardous waste.

1 --o0o--

2 MS. YEP: Once the waste is identified as a
3 hazardous waste, it follows along with all the
4 responsibilities commonly known as the "cradle to grave"
5 responsibility. And as far as management, we have, what I
6 consider, full hazardous waste management, you know, the
7 whole nine yards. We have the EPA ID number, we have the
8 storage limits, we have you can't transport that waste
9 without using a registered transporter. It has to go to a
10 permitted treatment storage or disposal facility.

11 And then we also have what's called universal
12 waste management standards. These are something
13 relatively new. And what it does is create alternatives
14 for our full hazardous waste management standards. And it
15 typically allows relaxed requirements for the storage,
16 collection and transportation activities in hazardous
17 waste management.

18 --o0o--

19 MS. YEP: Ultimately, at some point, as much as
20 we try to recycle, promote pollution prevention, source
21 reduction, some of this waste does go to land. And what
22 we're concerned about in waste disposal is the direct land
23 contamination as one of the concerns. There are other
24 considerations such as surface runoff, direct exposure to
25 workers, but, you know, direct land contamination is going

1 to be in inevitable.

2 We are also concerned in landfill disposal of the
3 potential to leak and leach mercury, which is why we have
4 our STLC or waste extraction test. And of recent concern
5 is mercury in landfill gases. A recent study in Florida
6 has detected mercury compounds in landfill gas and
7 suggests that the landfill gas may be a larger emissions
8 source than previously believed.

9 --oOo--

10 MS. YEP: When we talk about landfill disposal,
11 we have basically two options, hazardous waste landfill
12 disposal and nonhazardous waste landfill disposal. And
13 our hazardous waste disposal is in facilities. We do have
14 leachate collection systems, but no landfill gases are
15 generated, because no volatiles or putrescible wastes are
16 accepted so that we have no reason to generate landfill
17 gas.

18 Whereas, in our Class 3 or nonhazardous waste
19 land disposal landfill facilities, we do have criteria now
20 that any new Class 3 landfill require base liners and
21 leachate collection systems, but the majority of our
22 landfills in California don't have these.

23 And in a solid waste assessment test report,
24 about 70 percent of the landfills were leaking outside
25 their limits. However, any mercury that was detected,

1 none of that was over any beneficial use criteria.

2 Now, we mentioned A recent study and our concern
3 of finding mercury in landfill gases. Well, in California
4 in 1993 there was a requirement to collect landfill gas in
5 wells to either flare or prefer energy recovery in our
6 nonhazardous waste landfills. About half of our 275 Class
7 3 landfills do have landfill gas collection systems.

8 --o0o--

9 MS. YEP: So how much mercury do we really expect
10 to be originating from the waste? Before I can really
11 talk about that, let's kind of give you an idea of where
12 we are with just mercury as a material.

13 Well, since the advent of human activity, there
14 has been an estimated three-fold increase of mercury
15 circulating in the environment. And currently there is no
16 new mercury coming in from mining sources. That is,
17 they're all coming from our secondary sources from
18 recycling sources.

19 And, in addition, our supply of mercury has
20 exceeded our demand, so we can expect the declining
21 amounts of mercury originating from waste partly due from
22 the reduced demand for mercury, which has a direct effect
23 because we've been banning mercury uses in some of our
24 consumer products. And also our manufacturers are doing
25 some voluntary source reduction.

1 However, still there is more being deposited on
2 land and emitted in any other media.

3 --o0o--

4 MS. YEP: The amount of mercury coming in from
5 waste sources in the air in 2000 was estimated to be
6 almost one and a half tons. This data was generated from
7 the Air Resources Board, and it includes things such as
8 waste burning fluorescent tube light breakage,
9 incinerators, sewage treatment, co-gen plants, landfills
10 and a number of -- a couple of other sources.

11 --o0o--

12 MS. YEP: The amount of water sources, amount of
13 mercury waste coming in from contaminated potential water
14 sources, the report takes a look at what's coming out of
15 the dental arena. And about a half a ton of mercury from
16 dental amalgam is entering our publicly owned treatment
17 works in 2000.

18 That came from the mercury headworks analysis for
19 2000 in Palo Alto, the study down there. Given that there
20 is about a 90 percent efficiency at the POTWs over 100
21 pounds still enter California's waters.

22 --o0o--

23 MS. YEP: The San Francisco Bay Regional Water
24 Quality Control Board has been a real mover and shaker in
25 their TMDL efforts and produced a comprehensive report, in

1 which does point out that there's about 22 to up to 200,
2 almost 300 pounds of mercury from fluorescent light tubes
3 potentially breaking in landfills and going into the air
4 and potentially being deposited into the San Francisco
5 Bay.

6 And they do acknowledge, and we also acknowledge
7 that the primary water pollution source is emanating from
8 legacy waste.

9 --o0o--

10 MS. YEP: As far as what kind of mercury waste is
11 going to land disposal, we looked at a couple of areas.
12 One, the most recent projection was for 2000 was put out
13 by U.S. EPA, and the national projection was over 170
14 tons.

15 What we did in our report was take a population
16 based percentage and took 12 percent of 170 tons and
17 projected that in 2000. We had almost 21 tons of mercury
18 hitting our landfills, and included items such as the
19 batteries, lighting, paint, thermometers, thermostats, et
20 cetera.

21 --o0o--

22 MS. YEP: What we then try to do is try to narrow
23 down that number and do some comparison. And we did some
24 mercury projections just from the fluorescent lamps. In
25 2001, we're projecting, and these figures came from the

1 National Electrical Manufacturing Association, about 1.3
2 tons of mercury originating in fluorescent lamps versus
3 something that U.S. EPA put together for the national
4 level.

5 They projected so much tons of mercury emanating
6 from fluorescent lamps. And what we did again here was
7 kind of prorate it for California, and we came up with
8 almost five tons. Now, the differences is here could be
9 because, at the time of the projection, the universal
10 waste rule at the federal level was in place, so this was
11 actually the estimated potential landfill disposal.

12 --oOo--

13 MS. YEP: What we also tried to do in making our
14 projections on what could be hitting our landfills was to
15 try to narrow down what's coming out of the dental arena.
16 In 2000, 2.2 tons of mercury from amalgams, dental
17 amalgams, were generated for disposal or recycling. And
18 that does not include the mercury from amalgam entering
19 the POTWs.

20 Now, granted this is generated, we don't know if
21 it's hitting the landfills. My gut feeling is that most
22 of our dentists are recycling this amalgam just for the
23 silver value.

24 In that same study from the U.S. EPA, and again
25 taking the national level and projecting it to what it

1 would have been for California, we projected about .3 tons
2 being disposed in California landfills. And, again, some
3 of our data gaps is that we don't really know if this is
4 true or not, but it is a national projection that we did
5 do and apply it to California in lieu of any other data.

6 --o0o--

7 MS. YEP: This year the Department had an auto
8 shredder initiative. And what we found from the auto
9 shredder initiative that over 700,000 automobiles were
10 shredded in California. Each automobile potentially has
11 two mercury switches, each containing half a gram to one
12 gram of mercury.

13 So potentially we have three-quarters to one and
14 a half tons of mercury in auto shredder waste. What we
15 also did was go out and sample, and found that
16 approximately 300,000 tons of auto shredder wastes are
17 generated each year in California.

18 Now, remember the mercury we found in the auto
19 shredder waste doesn't exceed our mercury Soluble
20 Threshold Limit Concentration or Total Threshold Limit
21 Concentration. It's not hazardous for mercury.

22 But what our analytical testing does show that we
23 have potentially almost one ton of mercury in that auto
24 shredder waste. And given that 47 percent of that
25 feedstock are from automobiles, it's calculated that about

1 .4 tons of mercury in the auto shredder waste came from
2 automobiles, which does kind of raise the question of
3 where did the other, what, half ton to one ton of mercury
4 go, whether it went to the air or whatever?

5 --o0o--

6 MS. YEP: So we do know that fish consumption
7 advisories exist for California in California waters, and
8 we do know that many other states and national efforts are
9 ongoing to reduce and control and eliminate mercury in the
10 environment. And we do know that additional mercury
11 containing wastes entering the environment can be avoided.

12 --o0o--

13 MS. YEP: So what our report recommends is that
14 we're promoting pollution prevention and the use of
15 mercury alternatives and recycling by redefining the
16 hazardous waste criteria, which will then provide those
17 additional safeguards in the mercury loading into the
18 environment.

19 --o0o--

20 MS. YEP: The report recommends on how we might
21 be able to accomplish this by listing all mercury
22 containing waste, the use of universal waste management
23 standards where applicable or where it makes most sense,
24 Class 1 disposal, and phased implementation, meaning that
25 we might build some time in here to develop the

1 infrastructure for collection and recycling, to allow time
2 for phasing in the use of substitutes for mercury.

3 --o0o--

4 MS. YEP: So what else did we actually think
5 about when we came up with our report recommendation?

6 Well, we did think about lists, as I just
7 mentioned, listing everything no matter what the source.
8 We also thought about just listing the intentionally added
9 mercury containing wastes, meaning that it would
10 essentially leave out the naturally occurring waste
11 sources. And we thought about just listing discarded
12 consumer products. And with our nonconsumer products
13 utilize our existing STLC and TTLC levels.

14 We also thought about the possibility of
15 developing a new regulatory threshold. And, of course,
16 there's also the do nothing aspect.

17 --o0o--

18 MS. YEP: Once we've identified a waste as a
19 hazardous mercury containing waste, we looked at what kind
20 of hazardous waste management options we could utilize.

21 Of course, our options include the full hazardous
22 waste management requirement, so we'll give you the full
23 nine yards on how to manage the mercury containing waste.

24 We also thought about using universal waste
25 management standards where it made sense, phased

1 implementation, not only Class 1 disposal or hazardous
2 waste disposal, but also contemplated what are the
3 potential impacts of the -- noncontinuing to dispose at a
4 nonhazardous waste class landfill.

5 So how this all kind of plays out, it's sort of
6 like we have -- I'm sorry, the potential waste being
7 affected. We have identified in the report some types of
8 waste being affected, one being the automobile and
9 appliances, the auto shredder wastes, which we have some
10 data on, the quote unquote, "nonhazardous" fluorescent
11 lenses, toys, games, novelty items, they are going to be
12 eventually banned in California from being sold.

13 We also have mercury painted debris that we've
14 identified as a potential waste being affected. We are
15 familiar with lead painted debris. Well, mercury was used
16 in the paint as fungicide, and it could be potentially
17 affected.

18 We have ashes, sewage sludge, contaminated soil
19 not excluding mining waste and mercury containing
20 measuring devices that are potentially affected.

21 --o0o--

22 MS. YEP: So how does this kind of play out?
23 Well, we have -- this is kind of the pick one from column
24 A and pick one or more from column B. Pick one from
25 Column A on how we identify hazardous waste and one or

1 more from how we want to manage that hazardous waste in
2 column B.

3 --o0o--

4 MS. YEP: So to give you an example how this
5 might work is that if we regulate all mercury containing
6 wastes as a hazardous waste, the Department could
7 recognize the existing exclusion and exemptions for a
8 sample of the mining and the industrial waste waters in
9 the Clean Water Act. But it would include any detectable
10 amount of mercury in waste, whether it was naturally
11 occurring or intentionally added.

12 The management option would be the Class 1
13 disposal. And another management option that could be
14 incorporated into this example is that we would include
15 universal waste management standards for consumer
16 products, toys, games, lights and to facilitate the
17 collection and recycling.

18 And these management standards could be as
19 flexible as we would like it to be or waste stream
20 specific, the performance versus prescriptive standard.

21 --o0o--

22 MS. YEP: Also, we would consider under a
23 management option the phased implementation. So those
24 wastes where we site new technologies that are not
25 available, we need to just wait until such a technology

1 was available before we would enforce this.

2 And this phase of the implementation also allowed
3 time for switching from mercury to nonmercury containing
4 products and allowed time to develop an infrastructure for
5 collection, storage and recycling.

6 --o0o--

7 MS. YEP: Now, although we've mentioned Class 1
8 disposal, we do have another option here, alternative
9 disposal. We could use the STLC and the TTLC to determine
10 some disposal options, and may apply it to the soil, ashes
11 and sludges. And this would allow either Class 1, 2 or 3
12 landfill disposal.

13 --o0o--

14 MS. YEP: To kind of give you an idea how this
15 might play out, disposal at Class 1, 2 or 3 landfills,
16 whatever landfill you choose, has to be lined with a
17 leachate collection system. And the current STLC and TTLC
18 would be the determining factor in the Class 1 landfill
19 disposal.

20 And waste that wouldn't exceed the STLC or TTLC
21 would have the option to be disposed at our two or three
22 or a nonhazardous waste landfill.

23 And if you so choose to be on the conservative
24 side, if you're thinking about future liability, you can
25 still always choose Class 1 landfill disposal.

1 --o0o--

2 MS. YEP: Another example of how this might play
3 out in identifying mercury hazardous waste, this is to
4 regulate all intentionally added mercury containing waste.
5 And what this would exclude or not include is the
6 naturally occurring mercury and soils, ashes and sludges.

7 However, it does presume knowledge on the
8 generator where that mercury originated from. And the
9 other management options would be similar to what we just
10 talked about.

11 --o0o--

12 MS. YEP: Another example is that how to identify
13 a mercury containing waste and how we would pose to change
14 it is and what we would consider is regulating all mercury
15 containing consumer products when discarded.

16 Now, this would identify devices such as the toys
17 being mercury switches or the components. It would
18 capture things like cars, barometers and appliances and
19 all nonconsumer products discards would be compared to our
20 existing criteria the STLC and the TTLC.

21 --o0o--

22 MS. YEP: And, again, our management options
23 would include universal waste management standards for
24 those things that make the most sense. If we already have
25 an existing mechanism to collect fluorescent lights, it

1 just makes sense to continue to see how other things might
2 apply to those existing standards.

3 Phase implementation considerations. We might
4 make a difference between whether you're a consumer and
5 whether you're industry, and how we might phase the
6 implementation.

7 --o0o--

8 MS. YEP: And then it does -- the phase
9 implementation would allow time to switch from the mercury
10 to nonmercury products and to also allow us some time to
11 develop an infrastructure if needed.

12 --o0o--

13 MS. YEP: So what we need from you today is some
14 information, your input on some of the volumes that might
15 be generated, the waste types impacted other than
16 identified in the report, the kinds of concentrations
17 we're looking at in mercury and products in waste, is
18 there a capacity to treat and dispose and recycle, what
19 are the impacts of our options that we're contemplating to
20 you and your ideas on how to change the threshold to still
21 accomplish our objective to promote pollution prevention,
22 use of alternatives and recycling.

23 DIRECTOR LOWRY: All right.

24 Thank you.

25 What we'd like to do now is to start off with our

1 first panel of commenters. And they're in the first row
2 in front of me to my -- well, the agenda does have EPA
3 speaking first. Do we have -- I didn't know that David
4 Jones was here, is he here?

5 All right, good. David is the Waste Management
6 Division Associate Director for Region 9 U.S. EPA. He's
7 been with EPA 28 years in permitting and enforcement and
8 Superfund and waste management programs, Bachelor and
9 Masters degree in Chemical Engineering from Cornell
10 University, so he's well qualified to talk us.

11 Why don't you give us U.S. EPA's perspective,
12 then we will see the State agency's perspective.

13 Thank you.

14 U.S. EPA WASTE MANAGEMENT DIVISION ASSOCIATE
15 DIRECTOR JONES: Thank you.

16 You know understanding mercury and how it cycles
17 through the environment has really increased dramatically
18 over just the last ten years and EPA's concern about
19 mercury in the environment has probably increased
20 proportional to that increased knowledge.

21 As you heard from my brief introduction, I've
22 been with the EPA a long time. In the early seventies we
23 were writing NPDS permits and the machines only read in
24 the parts per million. EPA had that with the federal
25 register notice for what it thought was the most toxic

1 chemicals in the United States were. They only had six on
2 the list, because machines didn't read like they do today.

3 I think it was cadmium, chromium, DDT phenyl
4 cyanide and mercury. I know mercury was one of them. And
5 we thought in those days you just wrote a permit limit on
6 it and it was fine and the world would be great.

7 And in the last five years, EPA has had an
8 intensive effort on about 28 persistent bioaccumulate and
9 toxic substances, we'll call it our PBT initiative, really
10 just trying to get a handle on how we can address these
11 things that are really a global problem. A lot of them
12 cycle in the air in a global way. A piece of literature I
13 read said they drop out. Mercury sort of goes around like
14 a grasshopper, it changes form and then hops somewhere
15 else.

16 The elemental form can be in the environment in
17 the air for three years before it comes down. Mercury
18 oxide will probably come down in the first rain. So you
19 have a lot of different forms of mercury, and we didn't
20 even know methyl mercury existed that much just, you know,
21 10, 15 years ago.

22 So, first, I want to thank DTSC for this report.
23 It is extremely well written. It has clear, crisp
24 summaries, and a lot of options and you made it easy for
25 me. So I really appreciate that, and also for the wide

1 range of options. I appreciate everybody being here at
2 this time, like you mentioned before, you've really gotten
3 into the thick of things.

4 And, of course, we wholeheartedly endorse the
5 goals which are pollution prevention and recycling and
6 alternatives to mercury. So what I wanted to focus on a
7 little bit was actually some of the soil issues which I
8 know are not the focus of this report.

9 In the last ten years part of my job is the EPA
10 Superfund program. And I have the Clear Lake -- I've got
11 about 60 sites in my branch, and one was the sulfur bank
12 mine in Clearlake which was mercury mining. Then I have
13 the Carson River mercury site, which was historical gold
14 and silver mining contaminated soil for mercury.

15 And when I look at mercury, I think of the future
16 and legacy mercury. And there's really a big difference.
17 I think for the present and the future, we just have to
18 try to take any source of present air emissions of any
19 significance whatsoever and try to eliminate it.

20 And we can do our part, coal power plants can do
21 their part. The biggest mercury emitters still in the
22 world are some zinc smelters in Indonesia and Finland and
23 some of the southeast Asian countries. We'll have to
24 figure out how to deal with that. But eventually, we want
25 to have mercury be like lead where we can look years later

1 and say hey it actually is measurably less in the
2 environment. We have to stop putting more in as a
3 starting place.

4 And that's where, you know, the Air Board will be
5 doing its part. That's part of the EPA's emphasis with
6 its mercury strategy or first PBT strategy should be
7 coming out soon and it's for mercury, a laundry list of
8 issues, many of them regulatory, many of them voluntary,
9 many of them advocating consumer controls on mercury,
10 which I think will be much easier to do at the local or
11 State level than the federal level. So I really like the
12 emphasis of this report in looking at creative, flexible,
13 cost effective ways to deal with that.

14 So the DTSC, besides the Air Board, is doing its
15 job and hopefully us doing ours on the consumer products,
16 like a fluorescent light bulb. I'll get to landfills in a
17 second. Irrespective of what kind of landfill it makes it
18 too, they break on their way. And that's the mercury air
19 emissions source. And if mercury air emissions is the
20 biggest thing we should be reducing immediately, then that
21 is really something the type of consumer product or the
22 switches in automobiles where that can be released.

23 You know, the shredders, I presume, the blades
24 are fairly hot when you're shredding metal, and it may be
25 that there is a significant air source. We have no doubt

1 it doesn't seem to have a problem with the toxicity tests
2 for land.

3 But those are the types we should be looking at,
4 anything that can be contributing now to air, I think, is
5 something that we've really got to look at.

6 For the legacy goal, I worked a lot of
7 contaminated soil issues in the Carson River for elemental
8 mercury. Now, Corey and I were just at a mercury, mining,
9 rivers conference Thursday in Nevada City. And that area
10 up there, there are 26 million pounds of mercury put into
11 slough boxes. And that mercury is still around in many
12 forums, mostly elemental mercury.

13 In the Carson River Superfund site, our mercury
14 cleanup number started around 20, which is actually about
15 where the DTSC number is. However, one thing we've
16 learned in the last 15 years is how important the species
17 of mercury is. In that study what we've determined was
18 that mercury chloride and mercury oxide drive the risk
19 assessment in terms of human ingestion of soils. And what
20 we were worried about was kids playing in the front yards
21 in mercury contaminated soil or the backyard.

22 But being in that area, kids are ingesting that.
23 And so we did extensive risk assessments. And we found
24 out that the proper number for cleanup for a Superfund
25 site was 20 parts per million per kilogram, if it was

1 mercury chloride or oxide.

2 But over 90 percent of our mercury in our worst
3 case was elemental mercury, and that drove the risk
4 assessment up so the number, cleanup number, would be more
5 like 80 to 100.

6 Now, the reason I emphasize that, is it turns out
7 the entire town of Dayton probably was somewhere between
8 25 and 40.

9 DIRECTOR LOWRY: Is this Dayton, Ohio?

10 U.S. EPA WASTE MANAGEMENT DIVISION ASSOCIATE

11 DIRECTOR JONES: Dayton in the Carson River Valley, sorry,
12 which means that if the number had been 20, they would
13 have all had to be really concerned about the front yard
14 and we would have had a cleanup action for a whole town.
15 With the number of 80, I think there were only three homes
16 affected, so we did a really intensive risk assessment
17 based on that, and it made a big difference, the species
18 of the mercury.

19 And one thing you may want to look at is a
20 category of determining whether something is a waste based
21 on a special category for legacy mercury that's over 90
22 percent elemental, you know, to establish a category,
23 that's a hypothetical, but to establish a category which
24 presumes the mercury in the soil is predominantly
25 elemental.

1 And you may end up with a number that is
2 different than 20 and probably will. And it could make a
3 huge world of difference in terms of right now people
4 could be regulated, but then they could get exemptions,
5 but they're still in a process, and we have to use all our
6 creativity and flexibility.

7 If you look at that number and look at recent
8 risk assessments that are done, and it would only be for
9 that category not an industrial facility in San Diego that
10 has 40 parts per million mercury and no one around does,
11 but it may be that when you get to the Sierra Nevada's
12 that you want to establish a category of historical legacy
13 mercury in soils and have a different number. And the
14 reason -- the conference Corey and I were at, I think we
15 were the only two speakers that did not show a picture of
16 Green Horn Creek.

17 And the reason is it's an illustrative point, the
18 Green Horn Creek, which is a tributary to the Bear, in
19 1850 had a certain level. And right now you go there and
20 it's 80-year old trees in a spacious canyon and people sun
21 bathing. It's a great place. It looks like it's never
22 been touched.

23 But actually the bottom of Green Horn Creek was
24 raised 200 feet with mercury debris, laden debris, and
25 sediments during the historical gold mining. And then in

1 the last 100 years it went down 100 feet until it forms a
2 stable V, and now you have 80 year old trees on each side,
3 but you're actually standing on 100 feet of debris. When
4 you're on that creek, everything you see to the right to
5 the left, the whole V, is debris. It goes up 100 feet.

6 And so the surrounding area, it's not just an
7 isolated incident, you can drive for literally miles and
8 miles up there, and you are on nothing but, you know,
9 historical Placer mining debris.

10 So one thing to think about as a category that's
11 protective of human health and the environment, it was the
12 ingestion route which drove that. We started with a
13 number 20 just like you had, but that number was based on
14 mercury chloride. And when you start thinking elemental,
15 it's a little different.

16 So that's one point, just from our experience.
17 And that -- because we want to be protective of human
18 health and the environment everywhere. We want to make
19 sure we don't get any new air emissions, but we want to
20 make sure we have numbers that are appropriate.

21 The other thing is landfills. And it does not
22 surprise me that mercury is coming off of landfills. I
23 presume there's anaerobic sulfate reducing bacteria in the
24 landfills that are causing methyl mercury and other
25 mercury sources.

1 You have the decomposition taking place there,
2 the methane coming off. You have a carrier for this to
3 get out.

4 I think when you're trying to figure out Class 1,
5 2 and 3, it would be really good to Ground Truth the new
6 information from Florida and some of these new sources
7 about that.

8 DIRECTOR LOWRY: Ground truth what is that?

9 U.S. EPA WASTE MANAGEMENT DIVISION ASSOCIATE

10 DIRECTOR JONES: Ground truth, you know, really check out
11 the ground truth, no pun intended. With the table, I
12 think it's table 3-1 that shows, I think, the 17,000
13 pounds of mercury in California here, one is from landfill
14 gas.

15 Because I think either that number should be
16 raised because we find out there's new information or we
17 could say that is a potential source but not a significant
18 source. And when you're asking for feedback, whether
19 something like mercury contaminated soil should go to a
20 Class 1, 2 or 3 land dump or disposal facility, then it's
21 really good to know that you consider that a significant
22 source just not a theoretical or academic source for
23 methyl mercury.

24 DIRECTOR LOWRY: Looking through the presentation
25 some of the folks here will give later, there's at least

1 one which suggests that it's a seriously flawed study from
2 Florida. Have you at EPA looked at that study at all?

3 U.S. EPA WASTE MANAGEMENT DIVISION ASSOCIATE

4 DIRECTOR JONES: No, it's rather recent. I actually
5 learned of it by reading your report. I learned a lot
6 reading your report. So I think your report was good
7 again there's Realtime on that.

8 But I think to really figure that out, because
9 this is a big deal, whether I still think you need the
10 emphasis on consumer products, air emissions, the
11 fluorescent light, you know, there should be viable
12 infrastructures for recycling those, so that they don't
13 break, they don't get to air.

14 But then if they ultimately do end up being land
15 disposed, I think to make an informed decision whether it
16 be Class 1, 2 or 3, we should really have a good
17 understanding of the amount that goes up. So I wanted to
18 end like I started, it's a big issue. It's one that it's
19 tricky because we have mercury in a lot of places. And
20 it's hard to figure out where is the most bang for the
21 buck, where is it most cost effective. I think your
22 report really lays out where those places are, and does a
23 really good job at helping isolate the issues.

24 I guess I've come down at least on one part on
25 your regulated consumer products option try to eliminating

1 new sources of mercury, use pollution prevention and
2 recycling. And then for the legacy, let's really look at
3 that too and make sure that we're protecting the human
4 health and the environment. We didn't pick a number that
5 just triggers a lot of regulatory loops.

6 DIRECTOR LOWRY: All right. Thank you very much.

7 Let's move to our sister agencies within the
8 State of California that are here. And on my far left and
9 I'm going to try to get this in the right order is Jim
10 Donald, a senior toxicologist with the Office of
11 Environmental Health Hazard Assessment.

12 He's been there since 1989, Chief of the
13 reproductive toxicology and ecotoxicology programs. And
14 his main research background has been developmental of
15 neurobehavioral toxicity of metals.

16 Then we have from the Air Resources Board, Dan
17 Donohoue, did I say that right, is it Donohoue? He
18 oversees the development of statewide air toxic
19 regulations for stationary sources in California.

20 And making the trip from San Francisco is the
21 Executive Officer of the San Francisco Bay Regional Water
22 Quality Control Board, Loretta Barsamian. She's the
23 Director of water quality programs for nine bay area
24 counties.

25 And with her is Tom Mumley the manager of the

1 TMDL, Total Maximum Daily Load, group for the San
2 Francisco Bay Regional Board. Also, I would look to the
3 State Water Resources Control Board to help direct the
4 Statewide TMDL program. And then finally Tom Howard who
5 is the Deputy Director at the State Water Resources
6 Control Board here in Sacramento. He's been doing that
7 for 17 years.

8 And I'm at your pleasure as to who wants to lead
9 off. It might make sense just to go left to right or my
10 left to right. Jim, do you want to start?

11 DR. DONALD: Thank you. I'm a late substitute
12 for Dr. George Alexeef our Deputy Director, who
13 unfortunately wasn't able to be here today.

14 DIRECTOR LOWRY: Thank you for coming.

15 DR. DONALD: I'd like to also acknowledge the
16 staff in our Department who actually prepared the
17 materials I'm going to present.

18 (Thereupon an overhead presentation was
19 presented as follows.)

20 DR. DONALD: I'd like to begin by explaining to
21 the people who are not familiar with the structure of
22 CalEPA that OEHHA is not a regulatory agency. Our
23 function is to conduct risk assessments and to establish
24 acceptable levels of exposure to toxic chemicals such as
25 mercury.

1 --o0o--

2 DR. DONALD: And once we establish those levels,
3 they can be used as advisory levels or they can be used by
4 other agencies as a basis for their regulatory actions.

5 --o0o--

6 DR. DONALD: So within that context, we have an
7 interest in mercury that span several of our programs. As
8 you already mentioned that we at OEHHA issue sports fish
9 consumption advisories for State water bodies. As that
10 name suggests the advisories are specific to consumption.
11 It's really a function of public health rather than
12 environmental health.

13 But in some instances those fish consumption
14 advisories have served as at least a partial basis for
15 considering water bodies as compared for other purposes.

16 As I already mentioned, we develop toxicity
17 guidelines for several different media. And it was
18 mentioned that mercury and mercury compounds are toxic air
19 contaminants. As an outgrowth of the toxic air
20 contaminant program, there's the children's environmental
21 health protection program, or SB 25 Senate Bill 25 that
22 was passed in 1999.

23 That bill requires OEHHA in collaboration with
24 the Air Resources Board to establish an initial list of up
25 to five toxic air contaminants that, in the words of the

1 statute, "May cause infants and children to be especially
2 susceptible to illness."

3 And the initial focus is primarily on developing,
4 nervous, immune and respiratory systems. And then in the
5 context of drinking water, we have a public health goal
6 program, which establishes levels that are considered to
7 pose no biological threat to public health.

8 Those public health goals are taken into account
9 by the Department of Health Services in setting their
10 maximum contaminants levels. So those PHDs and MCLs
11 exactly corresponds to the Department of Health Services.

12 It also has to take technological feasibility and
13 economic factors into account.

14 --o0o--

15 DR. DONALD: The last program that has an
16 interest in mercury within our Department is the famous or
17 infamous Proposition 65, the Safe Drinking Water and Toxin
18 Enforcement Act of 1986.

19 --o0o--

20 DR. DONALD: We're jumping ahead a little bit,
21 but I just want to say under Proposition 65, even though
22 perhaps the most well known function is the identification
23 of chemicals that are known to cause cancer reproductive
24 toxicity and the warnings that are provided for exposures
25 to those chemicals, another provision which is perhaps

1 less widely known, but perhaps in some ways more relevant
2 to the discussion today, is the prohibition of discharges
3 to sources of drinking water of any chemical that's on the
4 Proposition 65 list.

5 So I'd like to talk about each of those in a
6 little more detail. As we've already heard, consumption
7 of fish is the primarily nonoccupational exposure to
8 methyl mercury. The fish consumption advisories that are
9 based on exposure to methyl mercury are primarily
10 associated with runoff from mercury mining or gold mining,
11 and we've already had a little bit about that this
12 morning.

13 The first California fish advisory that was
14 issued was based on methyl mercury levels in Striped Bass
15 in the Delta, and that goes back to 1971, and most of the
16 recent State advisories having included consumption
17 restrictions that are based on methyl mercury. There are
18 a total of 26 fish advisories that are currently in place,
19 and 12 of those advisories include consumption
20 restrictions that are based specifically on methyl
21 mercury.

22 --o0o--

23 DR. DONALD: The intent of the consumption
24 advisories are to protect frequent consumers of sport fish
25 or subsistence fishers from the neurotoxic effects of

1 methyl mercury. In order to develop those numbers, we've
2 looked at the most current studies that measure fairly
3 subtle neurobehavioral effects in developing fetuses and
4 young children. As many people are probably aware, there
5 has been a lot of interest in that area, and some very
6 large scale studies have been conducted over a number of
7 years, primarily in the Sea Shell Islands, where this
8 population consumes a very large amount of fish, and also
9 in the Fair Islands in North Atlantic where there's
10 another population that consumes not only fish, but large
11 amounts of quail meat contaminated with methyl mercury.

12 The results of those studies are still coming in
13 and there's a lot of discussion of how to interpret them
14 and how to reconcile the results of the two different
15 studies.

16 --o0o--

17 DR. DONALD: The one thing that's clear is that
18 there should be, and it is a special concern for pregnant
19 woman and young children, and that is the advice that we
20 issue is based primarily on that concern.

21 --o0o--

22 DR. DONALD: Under SB 25 the children's
23 environmental protection program, OEHHA tries to summarize
24 scientific studies on mercury compounds that show
25 children's sensitivity to mercury exposures. Those

1 summaries are reviewed by the ARB Science Review Board.

2 And they made a determination that mercury should
3 not be placed in the highest level of priority. It is not
4 among the five chemicals that were initially placed on the
5 list, and that's primarily due to the relatively low air
6 exposures and not about any concerns over mercury toxicity
7 or not over reduced concerns about mercury toxicity.

8 And in order to be considered under SB 25,
9 mercury had to already have been identified as a toxic air
10 contaminant, which as we've already heard, was the case.

11 OEHHA has developed toxicity criteria for
12 airborne mercury compounds under the toxic air contaminant
13 program. These reference exposure levels or RELs are
14 based on inorganic mercury and mercury compounds and
15 they're based on neurotoxic effects. These numbers, the
16 chronic REL is .9 micrograms per cubic meter, the acute
17 REL is 1.8 Micrograms per cubic meter. And these numbers
18 were developed based on adult occupational exposures.

19 These numbers are not based on methyl mercury and
20 they're not based on developmental exposures that methyl
21 mercury is considered under SB 25. Developmental
22 exposures to methyl mercury will be explicitly taken into
23 account.

24 --o0o--

25 DIRECTOR LOWRY: So you have a time table for

1 that?

2 DR. DONALD: There is a specific date by which we
3 are supposed to do that, I believe, but I don't know what
4 it is. I can get back to you on that.

5 DIRECTOR LOWRY: All right.

6 DR. DONALD: Under the Public Health Goal
7 Program, although mercury chloride has been identified as
8 a possible human carcinogen, the public health goal was
9 actually set on kidney toxicity of inorganic mercury.

10 And the public health goal is 1.2 parts per
11 billion or 12 micrograms per liter in drinking water.
12 Again, that number will be taken into account setting the
13 maximum contaminant level for mercury.

14 Under Proposition 65, as I already mentioned,
15 chemicals are listed if they're known to cause cancer or
16 reproductive toxicity. And reproductive toxicity includes
17 developmental male reproductive and female reproductive
18 effects. Methyl mercury compounds were listed as known to
19 cause cancer in May of 1996. Methyl mercury was listed as
20 known to cause developmental toxicity in July of 1987.
21 That was one of the earliest chemicals listed under
22 Proposition 65 for reproductive toxicity.

23 And based on the extensive knowledge we have of
24 this developmental neurotoxicity that goes back to the
25 episodes in the 1950s, there's also a listing for mercury

1 and mercury compounds based on developmental toxicity,
2 which went into effect in July of 1990, so that
3 encompasses the methyl mercury listed, but the separate
4 listing stands because of the effective date of the
5 listing.

6 But because of the latter, we're listing all
7 forms of mercury, not just methyl mercury, but also
8 elemental and inorganic and other organics, as already
9 mentioned, are covered by Proposition 65.

10 And as I already have mentioned there are two
11 provisions of the statute that apply to those chemicals.
12 Warnings are required for deliberate exposures above the
13 specified levels. But also discharges to sources of
14 drinking water are specifically prohibited about the same
15 specified levels, so I would point out that not all
16 discharges are prohibited. There are levels based on risk
17 of cancer or the likelihood of reproductive effects which
18 provide an exemption for the discharge of prohibitions.

19 And the specific levels that establish these
20 thresholds, both the warning requirement and the discharge
21 prohibition are for cancer, a ten to the minus five risk
22 level, which means a level of exposure that is expected to
23 cause no more than one excess case of cancer per 100,000
24 exposed individuals in a population with life time
25 exposure.

1 --o0o--

2 DR. DONALD: If a reproductive toxicity the
3 threshold for warning or discharge prohibition, there's a
4 level at which there would be no observable reproductive
5 effect given an exposure 1,000 times higher. So in
6 practice what that means is we find a level of exposure
7 that causes no observable effect and divide that by 1,000.

8 --o0o--

9 DR. DONALD: To date, all of the issues that have
10 arisen in Proposition 65 with regard to mercury have been
11 related to the warning requirement. So far no issues have
12 arisen that were related to discharge to sources of
13 drinking water.

14 --o0o--

15 DR. DONALD: And finally, since methyl mercury,
16 and particularly mercury compounds in general, are so well
17 known to be developmental toxicants, I would like to
18 mention that that's not really the only form of toxicity
19 that we're concerned about. Methyl mercury compounds are
20 carcinogenic. Methyl mercury chloride was found to cause
21 kidney tumors in three studies of male mice. They methyl
22 mercury compounds have also been observed to cause
23 primarily chromosomal damage.

24 So far no cancer potency estimate for methyl
25 mercury has been promulgated by OEHHA. I would mention

1 though that we did in 1994 release a draft number for
2 reproductive toxicity of .3 micrograms per day. Given the
3 extensive work that's been done since then, we probably --
4 we've not finalized that draft, as it stands, but we'd go
5 back and reconsider the more recent data before taking any
6 final action.

7 Thank you.

8 DIRECTOR LOWRY: All right, thank you.

9 Mr. Donohoue.

10 MR. DONOHOU: Thank you. I'm Dan Donohoue with
11 the California Air Resources Board. I don't have any
12 overheads today. I just have a series of brief comments
13 to provide a little bit of additional background as far as
14 the Air Resources Board and the local air pollution
15 control districts' efforts for controlling air emissions
16 of mercury, and then just probably two brief comments with
17 respect to the report today.

18 As mentioned by a couple of speakers, mercury and
19 mercury compounds have been identified as toxic air
20 contaminants in the State of California. They are also
21 listed as federal hazardous air pollutants. From the air
22 standard, the main effects that we evaluate for are the
23 acute and chronic effects because those have health values
24 associated with those. There has not been a cancer unit
25 risk factor developed yet or a potency factor as mentioned

1 by the previous speaker. So in looking at health risk
2 assessments, at this point in time, we do not look at the
3 cancer impacts. There is not Scientific Review Panel
4 approval for the value of that.

5 The major sources of mercury into the air that
6 we've identified, the most significant one is windborne
7 dust associated with national occurring mercury compounds,
8 combustion processes, you know, particularly fossil fuel
9 combustion, waste combustion and incineration of waste.
10 In addition, manufacturing processes, cement
11 manufacturing, geothermal power production are also
12 sources of mercury emissions.

13 As compared to most of the rest of the country,
14 we do see significantly less mercury emissions due to the
15 fact there is very little coal combustion that occurs in
16 California.

17 Since 1990, the California Air Resources Board
18 has been conducting ambient air monitoring at the 17
19 sites. Historically, there was 21 sites, but currently
20 there are 17 sites, throughout California where a variety
21 of toxic air contaminants are monitored. Elemental
22 mercury has been monitored historically at those sites.
23 The levels of ambient mercury monitored is less than
24 detection at those sites. There have been occasional
25 measurements that were above the detection level.

1 Basically, the State level is reported at 1.5
2 nanograms per meter cubed. As far as statewide ambient
3 air average that is actually half the protection level,
4 which means we were showing no detects at those sites, but
5 we do end up reporting those at half the overall
6 protection level.

7 In addition, there are six sites that have
8 been -- that are in the process of being established as
9 part of the Children's Environmental Health Protection
10 Program, the SB 25 program. At those six new sites that
11 they're going in, mercury will be again monitored at those
12 sites. Two of the sites are up and running, and the
13 initial results looking at mercury at those sites are
14 showing, again, nondetect with respect to ambient levels
15 of mercury.

16 With respect to air regulations, both the Air
17 Resources Board and the local air pollution control
18 districts have authorities to regulate emissions from
19 stationary sources of mercury. The Air Resources Board
20 also has responsibility to regulating mobile sources and
21 mobile fuels as they relate to mercury emissions.

22 Neither the Air Resources Board nor the local air
23 pollution control districts have adopted any regulations
24 that are specifically designed to control mercury
25 emissions in and of themselves. However, there are a

1 number of programs in place that do look at emissions and
2 would look at mercury emissions were they part of the
3 emissions from those facilities.

4 Most of the larger air pollution control
5 districts have either toxic use source review rules or
6 toxic new source review policies. Those policies or
7 regulations would require them to look at any new source
8 to identify any toxic emissions from those sources and to
9 conduct health risk assessments before permitting those
10 facilities to operate.

11 Basically, the level of control that would be
12 required is that that which is best available control
13 technology. And if the risk levels exceeded a significant
14 risk value that was established by the district, the
15 district would deny the permit.

16 In addition, there are other State and local
17 regulations that have been adopted. Their primary focus
18 has not necessarily been with respect to control of
19 mercury emissions, but has been -- that mercury has been
20 controlled as part of those efforts. One that has
21 previously been mentioned is the landfill regulations that
22 have been adopted by the local districts.

23 The second one would be the metal melting air
24 toxic control measure, the statewide measure which was
25 mainly designed to reduce lead, cadmium and other heavy

1 metals emissions from metal melting operations. To the
2 extent that mercury is involved in those emissions, the
3 control systems that were established to reduce the
4 emissions to the 99 percent level would also be effective
5 in reducing mercury emissions from those things.

6 In addition, the hot spots program has specific
7 reporting requirements. Any stationary sources that emit
8 more than one pound of mercury per year are to report to
9 the districts and that later comes into the Air Resources
10 Board. And in looking at those emissions depending on the
11 magnitude of those emissions and the proximity of public
12 perceptors to show, the sources may be required to do
13 health risk assessments. And the results of those health
14 risk assessments may require the sources to do either
15 notification or a risk reduction audit plan.

16 To this point, there have not been any sources
17 that have had to do that notification with respect to
18 mercury. At the current time, the Air Resources Board nor
19 the global districts neither one are developing any
20 specific measures to address mercury emissions from
21 stationary sources to the air.

22 With respect to the report presented today, the
23 Air Resources Board is supportive of any efforts to reduce
24 mercury emissions. We believe it's good public policy to
25 reduce potential emissions of mercury to the air, land and

1 water to the maximum extent possible in consideration of
2 costs and risk.

3 I think one of the concerns that we would have or
4 recommendations in the area that you may need to look into
5 further has to do with the classification of soils with
6 naturally containing mercury in those. We've been
7 involved somewhat in the issue of naturally occurring
8 asbestos in soils. It presents a unique challenge when,
9 in fact, that material has come to bear naturally. There
10 are some unique costs and risk considerations associated
11 with that, and there are also some issues about precedent
12 setting with respect to how do you treat naturally
13 occurring toxics in the environment, and what do you need
14 to do.

15 So there certainly are a lot of -- a number of
16 additional issues that need to be, I think, discussed
17 fully as you move forward with respect to particularly
18 that element of the program.

19 Thank you.

20 DIRECTOR LOWRY: All right. Thank you. I have a
21 couple of follow-up questions. Is it accurate to state
22 that the concerns that the -- and the risk assessments
23 that you have done relate to inhalation of mercury, is
24 that your primary focus?

25 MR. DONOHUE: Our primary focus would be chronic

1 inhalation, acute inhalation. And for the inorganic
2 mercury and mercury compounds and for mercury chloride, we
3 would look at multi-pathway so we would take the chronic
4 oral route also in consideration on there. The driver in
5 the risk assessments that we've seen is the oral route.

6 DIRECTOR LOWRY: All right. And you mentioned
7 that you're monitoring for elemental mercury. And by and
8 large you're getting a lot of detection limits on that.

9 Would you expect any different results if you
10 were monitoring for any other type of mercury?

11 MR. DONOHUE: I think based upon some of the
12 comments that we've heard here, maybe so. I mean, you
13 know, the current methodologies both the sample collection
14 and analysis does focus on elemental mercury and its
15 various valence states there.

16 Certainly, it would not be picking up the organic
17 mercury that was fairly easily volatilized. And so we are
18 aware that we would be missing that fraction. To what
19 extent that is at the current time, we don't know.

20 DIRECTOR LOWRY: All right. Thank you. Any
21 questions from you?

22 Okay. Next we have Loretta Barsamian from the
23 San Francisco Bay Regional Water Quality Control Board.
24 Welcome, and thank you for coming.

25 MS. BARSAMIAN: Thank you so much for inviting us

1 here today. I am very complimentary of the staff report.
2 I actually read it cover to cover. I thought it was
3 excellent, particularly on all the sources and laying out
4 all the alternatives, all your recommendations. I thought
5 it was just a very good multimedia approach to dealing
6 with mercury.

7 And I think that is probably the best news for
8 today is to see people at the table trying to work in
9 conjunction with you, air, OEHHA, water, federal. We need
10 to resolve the mercury issues in a partnership fashion.
11 And I think this report and its alternatives have done an
12 excellent job in laying those out.

13 DIRECTOR LOWRY: Thank you.

14 MS. BARSAMIAN: The important part is in San
15 Francisco Bay, which relates to today's workshop is that
16 the regional board has listed San Francisco Bay as
17 impaired. That term means something, impaired under the
18 Clean Water Act.

19 And we've done that in conjunction with the fish
20 advisory that OEHHA has on eating baked fish. And we also
21 have done it because of the bioaccumulative nature of
22 mercury.

23 Under the Clean Water Act an impairment listing
24 requires us then to do the TMDL, Total Maximum Daily Load.
25 It's a term you will consistently hear from us, because

1 it's our priority program. It's requiring us to now look
2 at the sources. What are the sources causing that
3 impairment? And then the next step is to write a control
4 strategy for how we will deal with those sources and
5 reduce the sources and input so that we can then stop the
6 impairment of the bay.

7 It's been a very difficult effort to do because
8 we're mostly dealing with legacy sources, and that is what
9 we're finding in our TMDL efforts that we have to deal
10 with legacy sources, but it also requires us to work very
11 specifically with you and the Air Board and the Waste
12 Board and OEHHA on dealing with active sources. And we
13 need these to be controlled.

14 We totally support the pollution prevention
15 activities, the source control activities, the recycling
16 activities, because all the sources and air deposition is
17 causing us to continue this impairment.

18 Our regulatory authority right now allows us to
19 work with the POTWs the soil treatment plants in
20 regulating their effluent, and that's usually a numerical
21 limit, that they can only discharge a certain parts per
22 billion of mercury in that effluent.

23 We also are dealing right now with the storm
24 water program, which is also a permit from us, that does
25 not, at this point, have numeric limits, but basically

1 says that cities and the counties have to implement best
2 planning practices. They have to do better housekeeping
3 in order to stop runoff going into San Francisco Bay that
4 has mercury loadings in it.

5 We also are very active in the dredging
6 community. This is a permit from us where we have to
7 regulate dredging and dredge material into the bay area
8 and waterways to assure that mercury, in particular, is
9 dealt with. And if the sediments are contaminated, we do
10 not allow aquatic disposal.

11 Lastly what you heard today, we also regulate
12 disposal to land. We have existing regulatory authority
13 to deal with a lot of these issues, but we're not certain
14 yet how to deal with air legacy sources and we're not
15 certain yet how to deal with air deposition issues.

16 So that's why today's meeting is so important to
17 us, is we have to have a very united way of dealing with
18 the mercury contamination so that we can stop the
19 impairment of the bay and stop the fish advisories in the
20 bay and many of our tributaries.

21 DIRECTOR LOWRY: Can I ask you, maybe it's a \$64
22 question, maybe it's a \$64 billion question. And that is
23 given the load in the nontechnical sense of legacy waste,
24 are we wasting our time here looking at other sources, and
25 if not, why not?

1 MS. BARSAMIAN: I would say absolutely not, we're
2 not wasting our time, because the legacy sources will be
3 difficult to control, and it will be years to control it.
4 As you know, inactive mines, we need to have the good
5 samaritan provision adopted in the water. The State has
6 it. The federal government doesn't.

7 But that's dealing with legacy issues. We can't
8 allow continued sources going in that will contribute to
9 the impairment. So the existing loads are not as big as
10 the legacy, but we feel very strongly that we need to deal
11 with the whole picture. We can't just do legacy and let
12 everyone else walk.

13 It's definitely a big picture issue. We have to
14 be united in how we deal with these things.

15 DIRECTOR LOWRY: All right.

16 MS. BARSAMIAN: And with me is Tom Mumley, who is
17 actually responsible for writing TMDL. Is there anything
18 else that you wanted to add to that?

19 MR. MUMLEY: Yes. Thank you. I'd actually like
20 to add few specifics to what Loretta is saying. I want to
21 partly use the opportunity to thank you again for what
22 you've done and thank you for the opportunity for
23 providing input upfront, because I know a lot of the data
24 that we've generated in our analysis of mercury in San
25 Francisco Bay has been shared with you.

1 With that perspective in mind, we shared with you
2 the frustration that we are data limited to make the most
3 informed decision. And that's one of our big challenges
4 and I think one of the ultimate challenges that we have in
5 making good judgments here is where do we spend our
6 dollars?

7 I mean, we have to balance spending dollars and
8 generating data versus spending our dollars on actions.
9 And I think you recognize that, in your analysis of
10 recommendations, where we can make an informed decision
11 based on some good assumptions, let's move forward versus
12 where there is significant economic consequences to a
13 decision we need to generate data.

14 Some other background points just for those
15 listening. When we speak from a water quality perspective
16 versus a hazardous waste perspective, there's some
17 distinct differences. When we're talking hazardous waste,
18 we're talking hot stuff, and we're talking about hazardous
19 waste thresholds that are defined as either total mercury
20 in 20 parts per million or soluble mercury in the form of
21 .2 milligrams per liter.

22 Well, our concern about mercury in water is at
23 the 50 parts per trillion range, not the .2 parts per
24 million range. There's a 4,000 fold difference in levels
25 of concern.

1 DIRECTOR LOWRY: Why?

2 MR. MUMLEY: If you get into the total amount,
3 our targets that we're developing for San Francisco bay
4 lead us to conclude that we'd like to see mercury and
5 sediments in the bay no higher than .2 parts per million,
6 whereas the total threshold for mercury is 20.

7 DIRECTOR LOWRY: And why that distinction?

8 MR. MUMLEY: Excuse me?

9 DIRECTOR LOWRY: Can you elaborate on why you're
10 coming to that conclusion?

11 MR. MUMLEY: Those numbers are driven by, you
12 know, analysis of what it takes to limit the amount of
13 mercury that would bioaccumulate through the food chain.

14 So the ultimate concern is the amount of mercury
15 in a fish tissue. There's actually an additional
16 threshold that we can work from, that EPA has a national
17 criteria now for levels of mercury in fish, basically
18 methyl mercury in fish, and that's a .3 parts per million.

19 So you can basically, through a risk model, you
20 can calculate back what level would you want to recognize
21 in the water column to hopefully prevent levels of fish to
22 exceed the .3 parts per million tissue concentration.

23 The bottom line, you know, it's like levels of
24 mercury less than hazardous poses no significant threat.
25 I mean we've had experiences along that line with

1 involvement of the cleanup of one of the big legacy
2 sources, the New Almaden mine in the Upper Guadalupe
3 Watershed in South San Jose.

4 If they were to cleanup that site strictly for
5 human health based on risk factors with exposures to
6 people and to the heartland that was being generated here,
7 there would be large amounts of mercury left to continue
8 to erode into the system into the bay, because the levels
9 of concern for direct human exposure is significantly
10 different than the levels of concern to fish and wildlife.

11 And then we have the indirect human problem of
12 accumulation in fish, we can't eat the fish. I mean, the
13 fish in Guadalupe River Watershed downstream of the
14 developing mine don't even have a consumption, you know,
15 not a limited consumption, there's no consumption allowed
16 for those fish.

17 So just to point out is that how we define a
18 problem is more restrictive than just defining something,
19 a waste material as hazardous. I mean we have hazardous
20 waste levels concerned to really keep those hot sources
21 far away from humans and others. But then in between our
22 water bodies and our hazardous waste sites are lots of
23 other opportunities to intercept and manage them.

24 So we're strongly supportive of this
25 collaborative effort. We recognize that we have some

1 direct authority and we're exercising those direct
2 authorities either through existing permitting exercises
3 or through our TMDL effort. And recognize the reason we
4 have to do TMDLs is literally stated in the regulations a
5 lot, where we identify impaired waters that are expected
6 to remain impaired after we've implemented the existing
7 requirements of the act to the technology based
8 requirements.

9 Essentially, all our existing listings are there
10 because our existing efforts aren't good enough to solve
11 the problem, so that's why it's pushing us to seek
12 resolution or seek control of sources beyond what is in
13 immediate reach of us. So if you're dealing with our
14 direct waste water sources, we've also been dealing with
15 direct discharges associated with contaminated soils,
16 contaminated wastes, either from landfills or add cleanup
17 sites.

18 But what we don't have control over right now,
19 which obviously still needs to be taken into consideration
20 are consumer product sources and air sources. And so
21 that's why we certainly want to be with you in partnership
22 in finding a smart way of regulating the whole mass.

23 And one last thought on the regulating the whole
24 mass. Yes, if you look on a mass basis the most
25 significant amount of mercury is already in the system,

1 due to legacies, so we have large amounts of sediments.

2 To some extent, we're lucky that mother nature,
3 going through her course, will slowly but surely address
4 what's in there. But as long as we're continuing to put
5 mercury in the system at rates greater than it can be
6 removed, we will never solve the problem. That's why you
7 have to be careful about doing a mass balance on a dynamic
8 system, that throws a ton in the system that doesn't
9 take -- all we have to realize is more is coming in than
10 is going out and levels that will never be reduced.

11 So we have to look at opportunities to reduce
12 levels coming in, and what gets us into the need for
13 addressing these sources that you're now looking at.

14 DIRECTOR LOWRY: All right. Thank you.

15 Mr. Howard from the State Water Resources Board.

16 MR. HOWARD: Well, Loretta and Tom covered many
17 of the issues I would have mentioned. But just a little
18 background and a little further issue on TMDLs.

19 The Board presently when it regulates various
20 sources, there are sort of three ways in which mercury is
21 involved in our regulatory program. The first is in the
22 set objectives. The second is in permitting, and the
23 third is in the TMDL arena.

24 With respect to setting the objective. Tom
25 mentioned the fact that 50 parts per trillion is a

1 reasonably common objective found among the nine regional
2 water quality control board basin plans.

3 However, the U.S. EPA is in the process of
4 considering promulgation of a California statewide
5 objective for fish tissue. And I'm told by our folks who
6 are required to implement this that we will be putting
7 together a State Implementation Plan. And that the
8 translator in our opinion for the fish tissue objective
9 that the U.S. EPA would promulgate is going to be about 17
10 parts trillion.

11 Now, by about 2003, we suspect that the water
12 quality objective for this state will be in the area of
13 about 17 parts per trillion, based on U.S. EPA's fish
14 tissue objective that they're going to be promulgating in
15 the near future.

16 Well, we write permits for MPDS permits for waste
17 water discharge. And we're having some substantial
18 problems around the State right now meeting existing
19 mercury objectives. In the waste water of the treatment
20 plants treating down to the level of 17 parts per trillion
21 or 50 parts per trillion is extremely problematic for the
22 municipalities and for that matter for the industry
23 dischargers.

24 And, of course, the only way to really meet those
25 numbers is to get them to a source reduction. And this is

1 where, of course, your activities will be of great utility
2 to us, that mercury is obviously ubiquitous in a lot of
3 areas, and it's appearing naturally in the effluent.
4 Since we can't treat it out with these kinds a levels, we
5 need to reduce it from its source. Obviously, we need to
6 have this kind of approach to deal with that.

7 With respect to TMDLs, you've heard about some of
8 the issues in the San Francisco Bay, but we have actually
9 81 mercury impaired water bodies presently listed around
10 the State based on our 1998 303(d) listing.

11 In fact, I suspect that there will be -- we're
12 doing the new listing now and there will be a number of
13 additional water bodies, especially the waterbodies on the
14 eastern slopes -- western slopes of the Sierras due to
15 mercury legacy pollutants.

16 As Loretta pointed out, to a great extent, many
17 of these are legacy sources, but we do need to control the
18 ongoing inputs.

19 Just to add as an aside, we do have a number of
20 contracts outstanding now to try to look at mercury
21 cycling in the environment. We are working with CALFED.
22 We've got about seven and a half million dollars in
23 contracts now looking at giving the gold mining area
24 issues of bioaccumulation, biomagnification, food web
25 analysis, source identification trying to develop more

1 information about the legacy issues from the gold mining
2 era.

3 I had a couple of comments I wanted to make
4 regarding the recommendations I saw in your report. I
5 guess the first comment I'd like to make is I'd like to
6 echo the comments of my Air Board colleague that there is
7 a concern, in my part, regarding the recommendation to
8 regulate all mercury containing waste as hazardous waste.

9 Obviously, as we've been pointing out it's
10 ubiquitous in the environment right now, a lot of legacy
11 sources, also naturally occurring sources. And, you know,
12 once these materials become handled by humans and then to
13 classify them as hazardous waste, I think, can be quite
14 problematic.

15 Just, as an example, up in the coast range,
16 CalTrans has fill issues regarding, you know, moving some
17 soils for road construction and are we going to call these
18 hazardous wastes then and try to treat them as such.

19 I also saw among the things that were listed as
20 potential hazardous wastes under this particular
21 recommendation, sewage sludge. The Board tries to
22 encourage beneficial reuse of sewage sludge. Obviously,
23 only to the extent that it's safe to do so, but it would
24 be a concern to start classifying it as hazardous waste if
25 there are only minute quantities of mercury in it, because

1 we don't feel that necessarily poses a threat in
2 comparison to the advantages associated with beneficial
3 reuse.

4 I noticed that one of your alternatives is
5 looking at intentionally adding mercury. And that, of
6 course, strikes me as being much more -- a potentially
7 more appropriate way to address the issue of mercury
8 pollution in the environment. I think you need to be
9 careful about how you define intentionally added in that
10 circumstance.

11 Again, our sewage sludge, you know, I think I saw
12 it was listed as being excluded under that, but I think a
13 person could make an argument that the mercury that
14 appears in sewage sludge could be, at least in part,
15 potentially added, so that's a potential concern.

16 DIRECTOR LOWRY: Those darn 49ers.

17 (Laughter.)

18 MR. HOWARD: Yes, that too.

19 Anyway that is some of my comments.

20 DIRECTOR LOWERY: Well, thank you very much all
21 of you for coming. What I'd like to do so is give you one
22 more opportunity, if while sitting there someone else said
23 something that you'd like to jump in.

24 And then after that take a short break, oh about
25 ten minutes, and reconvene with our environmental panel.

1 But I see one hand up, so go ahead.

2 U.S. EPA WASTE MANAGEMENT DIVISION ASSOCIATE

3 DIRECTOR JONES: Yeah, I just wanted to comment on what
4 Tom said. You know, I had mentioned maybe a legacy
5 category and we might want to look at what the appropriate
6 number is, and that was really thinking the soil
7 ingesting, thinking of, you know, a grading, you know,
8 somebody is doing some grading on their property or
9 something like that.

10 However, if there is a significant source of
11 erosion, then that's a different source. And I know at a
12 sulfur bank it weakened a removal action, because there
13 was basically a cliff of mercury contaminated sediment or
14 debris, which we then put in the proper slope and
15 revegetated. And so I don't think there's a real
16 conflict, but I think with these 81 water bodies that are
17 listed right now, and a potential for more, there's going
18 to be some local sources that may be determined in a
19 certain watershed or creek are significant erosion
20 sources.

21 And that is a totally good reason to take, even
22 if it's, you know, whatever the right number is, people
23 determined it's a large mass to deal with it. I don't
24 want to make it look like it in all cases, and I'm sure
25 people are flexible and creative enough that that could be

1 taken into account.

2 DIRECTOR LOWRY: All right. Thank you, David.

3 Any other comments from the panel members?

4 MR. MUMLEY: One further observation has to do
5 again with the methyl mercury driver factor here. And
6 what you could do is take into consideration when we're
7 addressing sources and consequences of those sources, what
8 can we do to manage that is in terms of methylation
9 capability, either at where it's going or how it gets
10 there. So that would allow us some opportunity to address
11 mercury ladens, mercury in soils, that if managed
12 properly, possibly even on-site as in transportation,
13 could be managed in a way that it would be no threat to
14 the result of the methyl mercury being released into the
15 environment.

16 It's actually not methyl mercury being released
17 into the environment, it's mercury being released into the
18 environment in areas where it could methylate. I think we
19 can find ways to effectively collect managed soils and the
20 like at the site, et cetera within the context of our
21 spectrum of waste management practices, everything doesn't
22 have to be disposed of at the site to solve this problem.

23 MS. BARSAMIAN: The only comment on that is it's
24 hard to know what causes the methylation.

25 MR. MUMLEY: Well, that's where I'm trying to go

1 in that that approach we're going to be really data
2 starved because of our limited understanding of how to
3 make that call.

4 MS. BARSAMIAN: That's what some of the comments
5 that Tom Howard was talking about is that we've got some
6 contracts going on trying to figure out how that happens.

7 DIRECTOR LOWRY: All right.

8 Well, thank you very much. And for those of you
9 who have business cards and have not given them to our
10 reporter, please do so. Otherwise go over and spell your
11 names slowly to him. We'll take a break till five minutes
12 after 11:00.

13 (Thereupon a brief recess was taken.)

14 DIRECTOR LOWRY: If you will all take your seats
15 we'll try and get started. All right, we have three
16 distinguished guests from the environmental community here
17 with us today.

18 Speaking first will be Lena Brook, the Project
19 Director of Clean Water Action. Since March, Ms. Brook
20 has directed the environmental health and toxics program
21 for Clean Water Action's San Francisco office. Her work
22 involves conducting research on a variety of environmental
23 toxins as well as educating community members,
24 particularly those who are most at risk about the health
25 hazards of environmental toxic exposures.

1 Bill Magavern, speaking second, is the senior
2 legislative representative for the Sierra Club of
3 California. He's an advocate on environmental issues
4 including toxics, energy and environmental justice. He's
5 been doing that since 1988, it says here. You don't look
6 that old.

7 He has represented environmental groups before
8 Congress and federal agencies and now focuses on
9 California legislative issues and California regulatory
10 agencies.

11 Finally, we have Mark Murray, the executive
12 director of Californians Against Waste. He's been with
13 them for the past 14 years, where he's been actively
14 involved in primary solid waste management and recycling
15 issues.

16 So welcome each of you. And Lena the floor is
17 yours. You need to press the button on your microphone.

18 MS. BROOK: Thank you.

19 DIRECTOR LOWRY: When the green goes on, it's
20 working.

21 MS. BROOK: Good morning. My name is Lena Brook
22 and I'm here today to speak on behalf of the Clean Water
23 Action, as well as its 20,000 California members.

24 Clean Water Action is a nonprofit organization
25 that works on a variety of pollution prevention,

1 environmental health and drinking water protection issues
2 throughout California.

3 DIRECTOR LOWRY: Can everyone hear in the back?

4 Why don't you try to put the microphone right up
5 to your mouth.

6 MS. BROOK: Is this better?

7 Okay. I would like to begin by concurring with
8 earlier speakers in commending Corey Yep and also the
9 Department for compiling what we thought to be a very
10 thorough, useful and lucid report that concisely outlines
11 the mercury problem that we face today.

12 We're heartened by the fact that the Department
13 is proactively considering regulatory mechanisms that will
14 lead to decreases in our environmental mercury loads.

15 We wholeheartedly agree with the report's
16 assessments that despite controls that have been put into
17 place throughout the past 20 years the environmental
18 mercury burden remains unacceptably high, and that action
19 must be taken immediately to protect public health and the
20 environment.

21 As we've heard mercury continues to be released
22 to air, water and land from a myriad of sources. It
23 leaches from municipal landfills. It's recently been
24 detected in landfill gas as well. And as a result, the
25 mercury finds its way into water bodies and continues to

1 bioaccumulate in fish tissue, which places the public at
2 risk.

3 The more we examine actual exposure to mercury,
4 the more evidence we have of the pervasive nature of this
5 problem. A recent a Mobile, Alabama study tested a small
6 group of fish consumers and found that seven out of the 18
7 people tested would rank among the top five percent of the
8 U.S. population with the most severe mercury exposure.

9 And earlier this year, data from the Centers for
10 Disease Control indicated that one in ten women of child
11 bearing age in the United States are now at risk for
12 having newborns with neurological problems due to inutero
13 mercury exposure. And this essentially translates into
14 approximately 400,000 babies born each year with
15 potentially compromised physical development as well as
16 the inability to learn and interact with others normally.

17 So we've already heard about the fish consumption
18 advisories that have been issued by OEHHA for fish
19 contaminated water -- I'm sorry for mercury contaminated
20 water bodies in California. And a number of these
21 advisories prohibit consumption of any fish species while
22 others just specify consumption limits for some species.

23 And it's interesting to point out that a similar
24 pattern is evident nationally with some states placing
25 advisories on all waters within their jurisdiction. So

1 the assumption from these advisories is that those who
2 catch the fish from these contaminated water bodies will
3 then warn their families, especially children and pregnant
4 women about the dangers of eating this fish.

5 And unfortunately, we see that this does not
6 always happen, and particularly non-English speaking
7 communities. So as a result of members of these
8 communities, particularly pregnant women and women of
9 child-bearing age, tend to consume more contaminated fish
10 than is recommended by the advisories and place themselves
11 and their children at risk.

12 I'd also like to note that based on rough
13 estimates, approximately three-fourths of the fish that
14 Americans eat are actually of marine origin, from
15 commercial sources not from locally caught sources. And
16 these are not covered by the OEHHA advisories.

17 The U.S. Food and Drug Administration has
18 recently placed the public on alert regarding consumption
19 of a handful of commercially caught fish, but so far the
20 FDA has not been testing fish for mercury levels as
21 frequently or on as many species as we would think it
22 would be necessary to protect the public. So in the
23 future, the list will likely grow.

24 All of this evidence points to the fact that in
25 the long term fish advisories are not adequate mechanisms

1 for protecting public health, and instead the prevention
2 of mercury pollution and eventual elimination of manmade
3 mercury or anthropogenic mercury use are the only viable
4 means to protect our children and ourselves from this
5 potent neurotoxicant.

6 However, because scientists now estimate that
7 once all manmade mercury releases have stopped, it will
8 take at least 15 years for mercury levels to go down to
9 the point where fish is safe for all to eat. It is
10 imperative that effective consumer outreach is taken
11 immediately.

12 Clean Water Action strongly supports the most
13 stringent mercury waste management scheme proposed by the
14 Department, and encourages the Department to recommend
15 option number 1 as discussed on page 94 of the draft
16 report, which classify all mercury containing waste,
17 including naturally occurring sources, as hazardous. We
18 see this approach as being appropriate for a number of
19 reasons.

20 It's precautionary in nature and will be the most
21 protective to both public and ecosystem health, and we see
22 that this is warranted. It would remove mercury leaking
23 waste from municipal landfills, which are known to leak
24 and also to emit methyl mercury similar to the federal
25 list waste classification, and it would also circumvent a

1 potentially problematic risk analysis process, and also
2 the development of regulatory thresholds which may not be
3 protective.

4 However, at the core of any decision to further
5 regulate mercury, there needs to be an understanding that
6 pollution prevention, the development of products that
7 offer nonmercury alternatives, and a focus on manufacturer
8 responsibility is critical, if we're to achieve true
9 reductions.

10 With all of the scientific knowledge that we've
11 accumulated about mercury's toxicity, its global mobility,
12 and its increasing prevalence in our world a zero
13 emissions goal seems the only feasible option to
14 undertake.

15 And to achieve this, we must cleanup existing
16 mercury contamination. We must cease the sale of new
17 mercury laden products and we must capture and retire
18 the mercury that is currently in our use stream. And to
19 this end, we're extremely concerned that both the draft
20 report and the management schemes outlined within it focus
21 solely on recycling of mercury as opposed to its ultimate
22 phase out.

23 The report accurately points out that for
24 individuals, households, businesses and industry, it is
25 currently easier to dispose of mercury containing wastes

1 than to recycle it. However, if the Department is going
2 to move forward with the effort of collecting mercury from
3 the waste stream it must clearly outline the plan of what
4 will be done without mercury once it's amassed.

5 With U.S. mercury lines long out of production,
6 we rely on secondary mercury for products, as was
7 discussed earlier. Yet even in this scenario, the United
8 States uses far less mercury than it has on hand. And so
9 what happens is that the U.S. shifts its mercury surpluses
10 abroad. And as a result, it just creates or exacerbates
11 the same types of problems elsewhere that we face in the
12 United States.

13 And, in fact, given the mobile nature of this
14 pollutant, especially when it's airborne, our export of
15 mercury inevitably returns to pollute our own environment
16 over time. And so regulatory mechanisms need to shift
17 from recycling mercury from waste to actually collecting
18 it and placing it into a safe, long-term storage.

19 And for those products like mercury containing
20 fluorescent light bulbs that have no viable substitutes,
21 we would recommend that high capture rates with economic
22 incentives, such as the bottle return deposit be
23 instituted as part of these regulations.

24 In cases where manufacturers persist in producing
25 nonessential mercury products where there are viable

1 alternatives, such as in the case of mercury containing
2 thermostats, we strongly support actions to either ban
3 sale of these products or to ratchet down the allowable
4 levels of mercury in these products over time. And there
5 have been laws passed in other states to reflect these
6 measures.

7 However, in all cases where there are mercury
8 containing products that remain in use over long periods
9 of time, such as thermostats or in cars, manufacturers
10 should be made to assume physical or financial
11 responsibility for assuring a 90 percent capture rate of
12 mercury.

13 We feel that only by completely phasing out the
14 existence of manmade mercury can we be assured that this
15 cycle that we're living in now of emissions, contamination
16 and public health threats will be broken.

17 Coupled with the primary management strategy of
18 classifying all mercury-containing wastes as hazardous,
19 the Department should focus on utilizing a combination of
20 hazardous waste management options that would result in
21 the most feasible implementation of what we see as strict
22 regulations.

23 In concept, we support the Department's plan to
24 recommend using the universal waste rule management
25 standards when they're applicable, and also to phase

1 implementation to allow necessary time for product
2 substitutes and infrastructure to be developed.

3 However, because of mercury's known volatility,
4 we question the Department's proposal to dispose of
5 collected mercury waste in landfills, even those with a
6 Class 1 rating. I'm under the understanding that there is
7 a land disposal restriction on mercury, and this was not
8 discussed in the report. And I'm not that familiar with
9 the details of these regulations, but I'm wondering if
10 that can be addressed at some point.

11 And again instead of we see the structure of
12 these regulations as framing the collection of mercury and
13 its capture on a permanent basis as opposed to it being
14 Captured and recycled and put back into reuse.

15 Clean Water Action also supports a formal
16 cooperative interagency effort to tackle this issue. As
17 evidenced by the draft report and also from the
18 presentations we heard from the various agency
19 representatives this morning, mercury pollution is a
20 multimedia problem, and it seems like it really requires a
21 coordinated effort on the part of a number of CalEPA
22 departments.

23 We see an interagency task force having the
24 ability to broadly and effectively regulate the range of
25 media that are contaminated by mercury, to closely monitor

1 the success of this regulatory framework, to disseminate
2 public information and to pay close attention to actual
3 public exposure.

4 This sort of task force we think would be an
5 effective tool and we strongly support its formation as
6 part of this rule-making process.

7 We believe that any regulations that are finally
8 promulgated on this issue must also be coupled with a
9 comprehensive, public education campaign to educate
10 consumers and retailers specifically about the mercury
11 problem.

12 One complicating factor I see arising is that
13 even if a waste or a product is classified as hazardous,
14 if it's something that's used commonly by the public at
15 large, there's a strong chance that it's not going to be
16 disposed of properly. This is already evident with
17 examples of common products like thermometers and most
18 fluorescent lamps and also with dental amalgam, all of
19 which are hazardous wastes at this time. They continue to
20 be disposed of at municipal landfills or released into
21 waters through POTWs.

22 Everyone in this room is probably familiar at
23 least in concept with the hazards of mercury exposure to
24 human health and particularly that of infants and
25 children. For the past year or so, Clean Water Action has

1 been conducting workshops to a broad range of communities
2 with the goal of educating people about the linkages
3 between environmental toxin exposures and learning
4 behavioral and developmental disabilities in children.

5 So far mercury has actually been a focus of these
6 workshops. And what I have seen is that most people are
7 not as lucky as we are to be well acquainted with the
8 dangers of mercury. They do not know that the fish that
9 they consume regularly may pose a threat to their health,
10 to the health of their unborn baby and also to the health
11 of their young children.

12 They are unaware most often of the connection
13 between the thermometers that they might use to ensure
14 that their child is healthy after a bout with the flu and
15 the developmental disorders that can arise in their kids
16 as a result of these thermometers breaking and disposing
17 of them.

18 So, again, a comprehensive public education
19 campaign that outlines the devastating health effects of
20 mercury, informs people that the product they own contains
21 mercury and provides specific disposal options that are
22 community oriented is critical if we are to succeed with
23 reducing our environmental mercury burden.

24 There are existing projects out there right now
25 in the environmental community such as the Clean Car

1 Campaign, local thermometer exchanges, also the work of
2 organizations Like Health Care Without Harm, who focus on
3 the health care community.

4 And all of these point to the fact that once
5 people, and even corporations, become aware of the mercury
6 problem, they're willing to take action and to implement
7 mechanisms such as proper disposal of products, removal of
8 mercury relay switches from cars, and revising purchasing
9 plans.

10 So the recommended option for dealing with
11 mercury waste that is outlined in this report should
12 really serve to augment people's knowledge about this
13 issue if its goals are to be met.

14 Californians have reaffirmed their commitment to
15 environmental mercury reduction by supporting the passage
16 of SB 633, which we heard about earlier during the past
17 legislative session.

18 So we now join a number of other states like
19 Minnesota, Vermont and Oregon just to name a few that are
20 proactively tackling the mercury problem.

21 In spite of existing hazardous waste regulatory
22 schemes for mercury containing waste, past and current
23 activities have resulted in unacceptable levels of
24 contamination that we see today. So the Department now
25 has an opportunity to promulgate regulations that will

1 have true lasting effects by actually removing mercury
2 from the use stream and properly disposing of existing
3 mercury laden wastes.

4 So the ultimate goal of these regulations should
5 be zero emissions. And we believe that listing all
6 mercury waste as hazardous will create strong incentives
7 for manufacture to rely on nonmercury source materials and
8 to invest their dollars in the development of product
9 alternatives.

10 We also believe that if they were making an
11 informed choice, most consumers would opt to purchase a
12 product that is not hazardous as opposed to one which
13 contains a powerful toxin that could potentially harm
14 their children.

15 So we look forward to working with the Department
16 on these regulations as they're being developed and I also
17 thank you for the opportunity to invite me to speak today.

18 DIRECTOR LOWERY: All right. Thank you for your
19 comments and thank you for coming.

20 Mr. Magavern.

21 MR. MAGAVERN: Good morning. I wanted to join
22 those who have commended the Department for this
23 pre-regulatory process. I think not only is the report a
24 very useful document, but I think it's a good idea to have
25 this kind of workshop before you actually go into the

1 proposed regulation stage.

2 And although I'm sure you can't devote this
3 amount of resources to all other issues, this might be a
4 good model for addressing some of the other most hazardous
5 of the substances that you regulate.

6 And we at the Sierra Club we're also supporters
7 of the Mercury Reduction Act, SB 633. But during that
8 process we're well aware that it was only addressing some
9 of the problems and that we need to have a much more
10 comprehensive overhaul of the way that we regulate mercury
11 in the State of California, and I think your proposal goes
12 a long way towards doing that.

13 The Sierra Club's position on mercury is that we
14 need to reduce and eventually eliminate sales of new
15 products containing mercury. Secondly, we need to collect
16 the mercury that we currently have out in the world, and
17 third to clean up the messes that we have, the legacy
18 that's been handed down to us.

19 And I think that this rule would help to promote
20 all three of those goals. Ultimately, we do want to have
21 the goal be zero emissions and zero discharge.

22 We endorse the proposal that all mercury
23 containing waste be treated as hazardous. Mercury clearly
24 is a hazardous product. And when it is a waste, it is
25 hazardous. We should not treat it as anything but that.

1 It doesn't make sense to have a threshold of when
2 mercury becomes hazardous. As we've heard from some of
3 the other witnesses, that threshold would have to be
4 minuscule, and in light of new data, would have to be
5 lowered. It probably is not feasible to have that kind of
6 threshold, and so we should just say if it has mercury in
7 it, it's hazardous.

8 And we've already heard a lot about the risks
9 presented to our health by mercury. And I think Lena did
10 a good job of establishing that so I won't repeat that,
11 but just give from my personal life an example of how
12 bioaccumulation and biomagnification really hit home.

13 This past Saturday was November Tuna day in my
14 household. And what that means is that my children, who
15 are both under seven, really love to eat Tuna Fish, but
16 because the amount of mercury that can be found in canned
17 tuna, we limit them to eating tuna one day a month. And
18 so they'll say can we have our monthly tuna now.

19 I really wish that we had a situation where
20 children's food was not so contaminated that we had to
21 regulate it this way. And as Lena said, most consumers
22 are clearly not aware of the amount of mercury that is or
23 could be in their Tuna and other population fish, and so
24 the risks are really out there.

25 One objection that was raised to the strongest

1 regulatory option is that there might be some situations
2 where it would present practical difficulties, if you
3 treated all mercury-containing wastes as hazardous.

4 I believe that your proposal includes the
5 possibility of having exemptions. And I think that as a
6 general rule you should say it's hazardous waste, you
7 leave open the possibility that you could have narrowly
8 tailored exemptions.

9 And so, for example, the case was given of
10 CalTrans in their fill operations having some mercury, I
11 believe you already allow CalTrans to treat their
12 lead-containing wastes as non-hazardous under certain
13 circumstances and could do the same for mercury.

14 Obviously, we wouldn't want to have huge
15 loopholes, but I think it makes sense to have a general
16 rule and then have the possibility of granting exemptions
17 as necessary.

18 We do know that, as a rule, all landfills leak,
19 and so we should not count on the ability of landfills.
20 And I know there have been great advances. And, you know,
21 not to slight the operators of those landfills, but we
22 should not count on the ability of those landfills to
23 contain all the wastes.

24 Also, I know that it's kind of surprising to hear
25 an environmentalist to say anything bad about recycling,

1 but when it comes to mercury, we do already recycle more
2 on an annual basis in this country than we use, and we, as
3 Lean said, we don't want to be exporting our poisons to
4 other countries, particularly in the developing word where
5 we know that the controls would not be as stringent as
6 they are in this country.

7 So the emphasis should really be on collecting
8 the mercury that is out there and getting those mechanisms
9 into place. And I want to suggest that there may be four
10 different kinds of regulatory scenarios that you need to
11 look at in CalEPA broadly. And as other speakers have
12 said, this problem really does require a cross-media
13 approach that many of the different boards and departments
14 in CalEPA should address. And certainly one of the
15 reasons for having the CalEPA agency in putting you all
16 here in this wonderful new building was to have the
17 opportunity to work together, and I really think that
18 opportunity is here on this issue.

19 The four different kinds regulatory scenarios
20 that I'll suggest are direct discharge to water which
21 clearly would be mostly in the province of the Water
22 Board, consumer goods, which is an issue, I think, you
23 should work with the Waste Board on. And we have talked
24 and we'll be talking more about that. Industrial waste
25 contaminated with mercury is really squarely within the

1 province of DTSC, I believe.

2 And there also are some kinds, fourthly, of
3 substances where we're not sure, at this point, whether
4 it's classified as a waste or it isn't. So, for example,
5 when buildings are demolished, you often have mercury left
6 over particularly from the thermostats.

7 And right now I don't think it's clear that
8 that's being classified as hazardous waste. I think
9 that's an area that really needs to be looked at.

10 As I said, I think ultimately we need to be
11 looking at how we can collect and store safely the mercury
12 that is currently in our environment, so that when we
13 isolate it and protect public health and the environment
14 in the long term.

15 And so I think there really needs to be further
16 study on what's the best way to do that. I don't think we
17 know, at this point, what it is, but we certainly don't
18 want to put the mercury someplace where it's not
19 retrievable and could leak out into the environment. We
20 need to have it be in a place where it can be monitored
21 and can be accounted for.

22 I also just want to say since I've been talking
23 about trying to prevent pollution by reducing and
24 eventually eliminating the use of products containing
25 mercury, that we should first do that for the products

1 where we know there's a safe substitute available, and
2 that was really the goal of SB 633.

3 Although, I don't think it captured all the
4 products, but some of the ones that it was the easiest,
5 the most feasible to replace.

6 I think we need to go beyond that, but I also
7 want to recognize that clearly there is an important use
8 for fluorescent lighting. I've worked on energy issues
9 for many years. I've been using compact fluorescents for
10 more than ten years and recommending them to other people.
11 And we clearly don't want to establish disincentives to
12 using energy efficient lighting, both because we have
13 clearly had an electricity problem in this State and also
14 had a situation in other states where most of the
15 electricity that's generated comes from burning coal,
16 which is dirty in all kinds of ways including the fact
17 that it releases mercury when burned.

18 So I think that we ultimately want to get to a
19 point where we're not using any mercury containing
20 products, but the kind of phased in implementation
21 suggested in your report makes sense. We need to develop
22 incentives for producing safe alternatives to mercury in
23 order to reach that end goal.

24 I think Mark is going to talk and has much more
25 expertise than I do, on the issue of collection. Clearly,

1 we need to make a lot of progress in that area. Just this
2 morning before coming over here, I called the local
3 Sacramento household hazardous waste collection program,
4 because I have some items including some mercury
5 containing items that I want to be treated as hazardous
6 waste. I don't want to throw away my garbage.

7 And I guess the good news, in a sense, is that
8 their schedule is so busy that, you know, they can't make
9 an appointment for me to take my waste there for some
10 weeks. On the other hand, I think the bad news about that
11 is that most people are not going to be going to the
12 trouble of making an appointment. It can only be two days
13 a week. You've got to drive somewhere to drop off your
14 stuff, so we need a much better infrastructure in place
15 and we need, as Lena said, to have a consumer education
16 program so that people know that there is mercury in these
17 products, and that it is hazardous and should be treated
18 that way.

19 That's one reason why we have consistently
20 supported labeling products that contain mercury. So I'll
21 wrap it up there, but I look forward to dialogue later and
22 being involved in this process as you move further into
23 the regulatory stage.

24 Thank you.

25 DIRECTOR LOWERY: Thank you. I have one question

1 I'd like to ask you about. And that is, when you're
2 advocating any mercury standard, how do you address the
3 one molecule concern that as our detection gets better,
4 products which have incidental mercury in it might then be
5 classified as hazardous under this proposal?

6 MR. MAGAVERN: I would suggest on a case-by-case
7 basis that if you have a product containing incidental
8 mercury and the case can be made that it is such a
9 minuscule amount and there is not a safe substitute for
10 it, it can't be phased out, and you're convinced that it's
11 not going to escape into the environment, to the extent
12 it's going to present a public health risk, exemptions
13 could be granted, but I would be very wary of any
14 wholesale exemptions, because I think what we've seen with
15 other substances is we go too far and allow far too much
16 of a hazardous substance to get out into the environment,
17 certainly that's the case with radioactive substances.

18 DIRECTOR LOWRY: All right. Lena, do you have
19 any thoughts about that, beyond what Bill said?

20 MS. BROOK: I agree with Bill's sense that on a
21 case-by-case basis is appropriate, but it also sort of
22 depends on what type of -- you know, whether you're
23 talking about a product, whether you're talking about, you
24 know, a situation like an automobile that has a mercury
25 switch in it that, as you know, relative to the size of

1 the automobile the mercury, is small et cetera, et cetera.

2 So I think that you'd have to really frame the
3 regulations to look at the substance and how mercury is
4 sort of fits within the overall composition of that as
5 opposed to just looking at the component of mercury in and
6 of itself.

7 DIRECTOR LOWRY: Okay. Thank you.

8 Mr. Murray you can talk about any range of issues
9 you want to talk about including my question.

10 MR. MURRAY: Sure. Mark Murray the Executive
11 Director of Californians Against Waste. And as the
12 director mentioned, I have, primarily for the last decade
13 and a half worked on solid waste and recycling issues.

14 And so I don't have the same level of expertise
15 frankly as your staff or some of the other panelists on
16 this issue.

17 However, I do think that we have two areas I want
18 to focus on that I think we may have a contribution to
19 make. One is that this material is going to landfill.
20 And as much as we love our landfills all of our landfills
21 ultimately leak. And so it's appropriate that we be very
22 concerned about the materials we put in those landfills
23 and recognize that it's not a permanent home.

24 Secondly, we have had some success in this State
25 in terms of diverting from landfill, specific problem

1 materials. And, again, primarily focused on the solid
2 waste area, but I think that there may be an opportunity
3 to use some of that success and some of the experience
4 we've gained in diverting solid waste materials.

5 Frankly, materials that don't pose any threat to
6 public health and the environment the same way that
7 mercury does, we've done by applying standards of
8 manufacturer responsibility to those products, we've been
9 able to keep them out of landfills.

10 So I want to, in terms my comments, I'm going to
11 focus on some of those issues. But first just to, you
12 know, what brings us here to this issue I think that we
13 strongly support the assessment of the mercury hazard
14 that's in the report.

15 The threat of mercury to public health and the
16 environment is a function of both the individual toxicity
17 in individual products as well as the cumulative impacts.
18 And I think that that really is what's bringing us to the
19 table now in recognizing that maybe the standards that we
20 had in the past that made sense on individual products, it
21 may be appropriate in time to change those standards given
22 the continued cumulative effect.

23 In general, I think that the states, while
24 important states current hazardous waste identification
25 criteria for mercury is haphazard, it's inadequate given

1 the cumulative impact and it's in need of an update.

2 And finally, the tolerable level of new sources
3 of mercury in the environment may be zero emissions. I
4 mean, there may not be an acceptable level of mercury in
5 our environment. And the assessment and the
6 recommendations and the report certainly concur with that.

7 So the bottom line is we strongly support the
8 banning of all mercury and mercury containing products in
9 landfills, and as a first step towards moving towards the
10 zero mercury emissions goal.

11 But recognizing that simply waving the magic
12 regulatory wand and designating all this material as
13 hazardous waste is not going to keep it out of landfills.
14 We've got lots of examples of hazardous waste materials
15 designated as such continuing to make their way into
16 landfills.

17 And so we recognize -- we view this regulatory
18 scheme as frankly a first step and want to just kind of
19 maybe weave through a couple of different items that have
20 been raised and maybe haven't been discussed.

21 Number one, with the existing regulatory
22 framework, with the existing rules regarding mercury, some
23 manufacturers have responded to those standards and some
24 manufacturers have reduced the amount of mercury in their
25 products. It would be unfortunate if in this move to

1 designate all mercury as hazardous and therefore banned
2 from landfills, that we lost that market incentive that is
3 existing out there for some manufacturers prior to being
4 able to just completely phase out mercury, reduce that
5 amount of mercury.

6 So as we're looking at individual ways of
7 implementing policies to reduce mercury, I think we have
8 to recognize that some manufacturers have responded in the
9 past and we should look to building on those standards.
10 Obviously, one of the -- the 800-pound gorilla in the room
11 on this is fluorescent lamps. And recognizing that some
12 manufacturers have reduced the amount of mercury in their
13 lamps, we may decide that no amount of mercury is
14 acceptable, but as we're implementing that phase-in, I
15 think that those steps that some manufacturers have taken
16 should be recognized. We should be looking at policies
17 that maybe -- I think we can't walk away from this policy
18 without talking about advanced disposal fees to help pay
19 for the collection and infrastructure, to pay for the
20 public education that's needed and to pay for the cleanup
21 of mercury that's going to slip through the cracks.

22 Any kind of advanced disposal fee system can
23 recognize differential levels of mercury in similar
24 products. Similarly, the State can create purchasing
25 preferences that recognize differing levels of mercury in

1 products.

2 I just don't want to leave this topic of -- given
3 the fact that there are some manufacturers that have done
4 exactly what we've asked them to do with regard to
5 reducing mercury and it's important that that be
6 recognized and be built on those incentives.

7 But ultimately we need to be talking about
8 banning mercury, phasing mercury containing products
9 completely. And in that regard, we've had some success in
10 California in terms of using the advanced disposal fee
11 concept as a way of not just paying for the collection of
12 material, but actually using it as a market incentive to
13 reduce the amount of the problem materials.

14 In the State's bottling, can and recycling law,
15 we use a differential advanced disposal fee to send a
16 signal to the marketplace about the kinds of packaging
17 that we favor. Packaging that has a very high recycling
18 cost and low recycling rate, pays a higher advanced
19 disposal fee. It seems appropriate that as part of a
20 regulatory infrastructure, we look at an advanced disposal
21 fee systems that both helps to finance that collection as
22 well as send a signal to the marketplace in terms of what
23 level of -- in terms of achieving our mercury phase-out
24 goals.

25 DIRECTOR LOWRY: On the subject of advanced

1 disposal fees, do you think that the Department has
2 authority to impose them unilaterally.

3 MR. MURRAY: Unfortunately, I don't believe that
4 Department has the authority to implement advanced
5 disposal fees. Although, I think that there could be a
6 stretch of your authority, when you look at the amount of
7 time that is going into regulating these materials, I
8 think that -- you know, I think you could probably frankly
9 give it a shot, but we'd probably end up in the courts.
10 And what I'd rather do is this is a backdrop of pursuing
11 this legislation -- regulatory scheme frankly
12 simultaneously pursuing a legislative agenda that give you
13 the authority, and implement an advanced disposal fee as
14 well as a phase out of mercury containing products.

15 DIRECTOR LOWRY: All right. Did that wake
16 everybody up?

17 Go ahead.

18 MR. MURRAY: Frankly, that's why we're here. You
19 know, we're here on this issue because we see an
20 opportunity to keep a material that is contaminating
21 landfills today that is contaminating the environment
22 that's contaminating public health and we see this as an
23 appropriate material an appropriate product area for
24 advanced disposal fees which have worked in other areas.

25 In terms of -- I want to just touch on the

1 recycling issue. Normally, when we talk about material
2 recycling, we're talking about the benefits of diverting
3 that material from landfill and saving the resource. And
4 this is an instance where maybe this is a resource we
5 don't necessarily want to save. The primary goal is
6 diverting it from a landfill.

7 I think that using the term recycling in the
8 common way that the public recognizes it as a collection
9 mechanism may continue to be valuable. The public
10 understands that when they want to keep something out of
11 the landfill, they recycle that material. And I think
12 that for when we're communicating with the public, we're
13 communicating with manufacturers that's a valuable tool.
14 That doesn't mean that in this particular instance what we
15 want to do is save this material and reintroduce it into
16 the economy.

17 In this instance, recycling is our mechanism for
18 diverting it from landfill. The other item that's
19 identified in the report is recommendations, the idea of
20 applying the universal waste rule to mercury waste. We
21 recognize the need and support the need for having a
22 differential regulatory scheme for material recycling.

23 At the same time, it's important that we are just
24 as vigilant in our objectives of protecting public health
25 and the environment under the specific details of what

1 that universal waste rule scheme looks like.

2 Sometimes recycling establishments and collection
3 infrastructures can be just as threatening to the
4 environment as actually disposing of theirs. Just because
5 it's recycling doesn't necessarily make it an
6 environmentally friendly environment. If mercury can be
7 exposed to workers, to the public, to the environment, it
8 needs to be properly regulated.

9 DIRECTOR LOWRY: Are you suggesting then that
10 there could be more than one universal waste rule?

11 MR. MURRAY: Well, universal waste rule to me is
12 the notion that it's something less than the full blown
13 hazardous waste permitting process, but different wastes
14 get treated in different ways under the existing universal
15 waste rule and I think that that's appropriate.

16 The way that we deal with mercury is going to be
17 different than way we've had to deal with lead, for
18 example just in terms of two hot issues right now.

19 So, you know, maybe just to wrap up, we strongly
20 support the assessment of the mercury problem. We
21 recognize that we support the recognition that we've got
22 to change the existing rules of the game. We support the
23 proposal to change those rules to the game, to recognize
24 all mercury waste as hazardous waste, but we also want to
25 note that it's important that we -- simply waving that

1 magic wand is not going to make the mercury go away.
2 We've got to continue to -- we've got to put an equal
3 parallel effort into developing that collection
4 infrastructure. That collection infrastructure can be
5 benefited by a universal waste rule scheme.

6 But ultimately we're going to need legislation
7 that phases out mercury containing products, that
8 establishes an advanced disposal fee on mercury products
9 to finance that collection and pay for its clean up as
10 well as for public education.

11 DIRECTOR LOWRY: Do you know of any other states
12 that has an advanced disposal fee on mercury products?

13 MR. MURRAY: I'm not aware, but we've been the
14 first on a number of things, and I think other states are
15 expecting us to.

16 DIRECTOR LOWRY: All right. Thank you for your
17 valuable comments and thank you to the panel.

18 Now, we had one other panel member Jane Williams
19 who phoned us from the Burbank Airport. I think she maybe
20 able to join us in the afternoon. We also have seven
21 industry speakers who would like to address us, which we
22 will do immediately after lunch taking into account
23 whether we can get Ms. Williams on first.

24 The agenda I have has us breaking at 12:15 for
25 lunch. And what I would suggest, although I'm open to

1 counter suggestions, is that we break now and come back at
2 1:00 o'clock instead of 1:30. Does that make sense to
3 everybody in the audience?

4 All right.

5 And also I'd like to thank Linda Janssen who's
6 been doing a great job with the technology here, and Jim
7 Markson, the head of our Public Participation Program and
8 the other folks with that program who have helped put this
9 together.

10 Thanks everyone for bearing with us this morning,
11 and we will see you promptly at 1:00 o'clock.

12 Someone will be remaining here in the room over
13 lunch, so not accepting liability, but you can probably
14 leave things in here and be secure that no one is going to
15 come and ransack the room during that hour.

16 (Thereupon a lunch recess was taken.)

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1 AFTERNOON SESSION

2 DIRECTOR LOWRY: Let's get started again.

3 Thank you all for coming back. I hope you had a
4 good lunch. We will proceed with the third panel on your
5 agenda. And I also understand that Jane Williams, one of
6 the environmental organization speakers has arrived at
7 Sacramento Airport and we're sending someone out to her.
8 What I would propose to do is have her give her remarks
9 before the scheduled time for comments from the floor.

10 We've got seven speakers lined up, a
11 distinguished group of people from industry. And I think
12 I've got them in order of speaking, I'll introduce them as
13 they are now and in fact Jane Williams has just come in.
14 Welcome Jane. What we're going to do is have you give
15 your comments at the beginning of the public session for
16 as long as you've got prepared.

17 We'll have the industry panel now. And I can't
18 remember his name but welcome as well.

19 (Laughter.)

20 DIRECTOR LOWERY: Pete Bleasby the director of
21 the Industry Relations and Standards Group for OSRAM
22 Sylvania Incorporated. He's Chairman of the Lamp
23 Manufacturers Committee of the Nation Electrical
24 Manufacturers Association, other wise known as NEMA. He's
25 been involved with lamp disposal issues since 1991.

1 We also have Pat Sullivan, the vice president of
2 SCS Engineers. He has a bachelors in ecology from
3 Harvard, 12 years of experience in environmental
4 consulting. By the way Congratulations to Harvard on
5 their perfect season.

6 He's specialized in solid waste management, not
7 Harvard but Mr. Sullivan. He's the vice-chairman of the
8 Rules and Regulations Committee of the Solid Waste
9 Association North American, a member of the waste industry
10 air coalition.

11 We have Paul Abernathy, the executive director of
12 the Association of Lighting and Mercury Recyclers,
13 represents lamp, ballast and electronic product
14 association of nationwide. It is a nonprofit organization
15 providing education and outreach on the universal waste
16 rule on recycling and attempting to divert mercury from
17 solid waste. Almost 30 years environmental industry and
18 owner/operator and business consultant. Also, active in
19 the federal universal waste rural development in many
20 states to promote recycling policies.

21 Patricia Becker is here as a senior technical
22 support professional from Phillips lighting. She is part
23 of the lighting Industry. She has been a part of the
24 lighting industry for 20 years, a member of the Aluminum
25 and Engineers Society of America for 20 years, and is the

1 Phillips technical support for the western region for five
2 years.

3 And we have Teresa Pichay, have I pronounced that
4 It properly, Pichay. She's the policy analyst for the
5 California Dental Association working for that association
6 for six years, previously worked with the local chamber of
7 commerce and other not-for-profit and professional and
8 industry associations. Mark Madden, co-chair of
9 California Institute of Scrap Recycling industries, Office
10 of the Governor in Oregon. Is that current or some time
11 ago?

12 MR. MADDEN: Some time ago.

13 DIRECTOR LOWRY: All right. And now with
14 representing Schnitzer Steel in Oakland.

15 And finally Eric Almberg Treatment and Operations
16 Manager of a Saftey-Kleen Buttonwillow Incorporated. A
17 degree in biochemistry and employed at the class 1 site in
18 Buttonwillow since 1984, currently responsible for waste
19 acceptance and receiving activities, customer service and
20 treatment plant operations.

21 So thank you all for being here and we have you
22 scheduled pretty much for an hour and 45 minutes. Be as
23 brief as you can, but as illuminating as you can as well.

24 So Peter will you start.

25 MR. BLEASBY: Thank you very much and good

1 afternoon.

2 (Thereupon an overhead presentation was
3 presented as follows.)

4 MR. BLEASBY: First of all, some general
5 operations on the report on the next slide.

6 --o0o--

7 MR. BLEASBY: We think that the Department has
8 done an extremely good job of gathering the facts and
9 identifying the issues, and in particular in identifying
10 the issues in connection with lamps. And that is the need
11 to increase recycling of all mercury containing lamps and
12 at the same time to encourage the use of energy efficient
13 lighting.

14 It may not be appreciated energy efficient
15 lighting is the low-hanging fruit of any electrical
16 conservation measure. Now, mercury is used in energy
17 efficient lamps, because it is essential for the operation
18 of all fluorescent lamps and most high intensity discharge
19 lamps.

20 A high intensity discharge lamp is the kind of a
21 lamp you see outside in streetlighting and in some
22 commercial buildings and some industrial buildings.

23 Efficiency is, general speaking, about four times
24 that of an incandescent lamp, so that speaks for itself on
25 the environmental perspective.

1 Industry has not been idle with regard to
2 reducing mercury in the products. And since 1985 we've
3 gone through about an 80 percent reduction. The last time
4 that we surveyed this amongst the industry, the average
5 mercury content of a four-foot fluorescent tube was 12
6 milligrams. That was in 1999. If we did that today, it
7 would probably be less than ten milligrams.

8 We have a continuing commitment not only in the
9 United States but also in other parts of the world to
10 reduce mercury. For example, the European W triple E
11 directive has some source reduction initiatives. The
12 Canadawide standard is another. And the Great Lakes
13 binational toxic strategy is yet another of the firm
14 commitments made by the industry in the Americas and
15 worldwide.

16 We are, at a point, where any further reductions
17 start to impair performance depending on product design.
18 Mercury content is designed for each lamp type to achieve
19 its rated life in all circumstances of use. Mercury is
20 consumed at a different rate within a lamp depending on
21 how it is used, if it's friction. If it's used indoors or
22 outdoors, what kind of ballast uses whether it's the comet
23 ballast or one of the older ballasts, always influence the
24 rate at which mercury is consumed in the design.

25 When I say consumed, I mean that the mercury is

1 being taken up by various parts of the lamp. There is
2 components. But the bit that interests us the mercury
3 that is left in the discharge in the air space in the
4 middle of the tube that is what gives us the efficient
5 source of ultraviolet radiation, and then ultimately the
6 efficient generation of light.

7 So we're interested in exactly how much is left
8 in the lamp at the very end of its life. And if it's not
9 sufficient, then the lamp will fail for mercury starvation
10 instead of one of the more traditional mechanisms.

11 DIRECTOR LOWRY: Can you help me where does the
12 mercury go to convert to non-mercury?

13 MR. BLEASBY: Mercury will be absorbed mainly in
14 the white phosphor coating, but also in the electrodes at
15 each end, that's the filament at each end of the lamp in
16 the coatings of that filament and in the metal parts,
17 mercury is very reactive and this is why we have to judge
18 very carefully the amount of mercury so that there's
19 enough free mercury left in the discharge to take the lamp
20 to the end of its rated life under all circumstances of
21 use.

22 DIRECTOR LOWRY: Does it change chemical
23 composition or anything. It's all natural mercury?

24 MR. BLEASBY: Yes, it does change mercury.

25 --o0o--

1 MR. BLEASBY: So for example it may be
2 environmentally preferable for us to increase high output
3 or to extend life versus trying to get the lowest mercury
4 content. How low can you go is not necessarily good for
5 the environment. And I've certainly seen installations of
6 super low electrolamps, that have caused considerable
7 problems in that all right.

8 We support the recycling of all mercury
9 containing lamps. First of all, from an administrative
10 point of view, it eliminates confusion on consumers, waste
11 haulers and landfill operators. If it's normal and white,
12 it belongs in recycling and not in the landfill.

13 It also eliminates complex and expensive testing.
14 It assists an emerging recycling industry by increasing
15 volumes and thereby stabilizing costs and hopefully Paul
16 Abernathy will address that in more detail.

17 It will certainly have no negative impact on our
18 commitment as an industry to reduce mercury content in our
19 lamps, which I referred to on the previous slide. It will
20 certainly reduce air and water releases via lamp breakage,
21 and it is the environmentally right thing to do.

22 In 1994, my industry commented to U.S. EPA in
23 their proposals for the universal waste rule that an
24 appropriate strategy would be to permit the landfilling of
25 lamps and the recycling of lamps and to sunset the

1 landfilling at such time as they felt that recycling had
2 sufficient capacity.

3 It's taken about seven years for some of the
4 regulators to believe us, but nonetheless that is what we
5 suggested at that time.

6 --o0o--

7 MR. BLEASBY: Why recycling all lamps in
8 California is feasible. First of all, industry will
9 support recycling and has done so and will actively assist
10 in outreach.

11 A couple of points I'd like to mention there and
12 that there is a web site already in existence called
13 lamprecycle.org in which anyone can go onto that web site
14 and find out about the proper disposal of lamps anywhere
15 in the United States. Also sends them to a list of lamp
16 recyclers.

17 This also is a way that we persuade distributors
18 and retailers to do -- to advise consumers of lamps on
19 proper disposal procedures, once those have been
20 established.

21 There is certainly ample recycling capacity and
22 collection infrastructure already existing that can easily
23 be grown to accommodate any increases in demand. And
24 other states have certainly adopted similar policies, so
25 this is not a big precedent.

1 The list of states are Connecticut, Maine,
2 Minnesota, Rhode Island, and Vermont. It omits,
3 unfortunately a very important State, and that is Florida,
4 and they all have partial or total solid waste bands on
5 the disposal of lamps. They're either in effect now or
6 they will be shortly.

7 And it's interesting to note that Minnesota and
8 Florida were the first here. And Minnesota introduced its
9 requirements in about the 1993/94 time frame. It has
10 achieved 70 percent recycling rate without any advanced
11 disposal fees or labeling requirements. It's been done
12 simply by outreach and has been very, very successful.

13 --oOo--

14 DIRECTOR LOWRY: What happens to the other 30
15 percent in Minnesota?

16 MR. BLEASBY: I'm sorry?

17 DIRECTOR LOWRY: What happens to the other 30
18 percent in Minnesota?

19 MR. BLEASBY: I think that's probably a question
20 for Minnesota, but I think probably the next slide will
21 illustrate that to some degree.

22 DIRECTOR LOWRY: All right.

23 MR. BLEASBY: The major opportunity for
24 increasing the lamp recycling is in the commercial sector.
25 And by that I mean nonhouseholds. You'll see there from

1 the pie chart that households represents about 15 percent
2 of lamp use in California, and 85 percent from commercial
3 industrial institution and so on.

4 Currently only a very small percentage of those
5 commercial lamps are being recycled, estimated about 20
6 percent. And it is the disposal of these large quantities
7 of lamps, no matter how much luck they have in them that
8 gives us the problem of breakage and therefore emissions
9 to the environment.

10 And I'd like to mention that the auto shredder
11 waste problem that Corey Yep mentioned earlier this
12 morning in that in spite of the fact that the waste may
13 not technically be a hazardous waste, there's an awful lot
14 of mercury there that shouldn't be disposed of in that
15 matter.

16 The costs sometimes are cited as a problem, but,
17 in fact, recycling costs are typically less than one
18 percent of the ownership costs of lamps over their entire
19 life. And in some cases in areas of high energy rates a
20 lot less than one percent. The most rudimentary energy
21 efficiency retrofit will put in the owner's pocket about
22 30 times the cost of recycling a lamp properly at the end
23 of life.

24 --o0o--

25 MR. BLEASBY: Current testing protocol is a TTLC

1 test. This allows for unlimited amount of a mercury lamp
2 to be disposed of in landfills as long as the waste is
3 under 20 parts per million.

4 Now, we believe this creates a strong incentive
5 to produce lamps with a shorter life because it's a
6 question of how low can you go on mercury. And it creates
7 a strong disincentive to develop a smaller efficient
8 longer life lamps. And here I'm going to go over to the
9 podium because we haven't had a show and tell yet, but I
10 have one for you.

11 I have here three types of fluorescent lamps.
12 Now they are the -- typically you would expect a
13 fluorescent Lamp to be four-foot long. These are the two
14 foot versions because airport security these days isn't
15 particularly friendly to bringing large tubes of glass on
16 board.

17 (Laughter.)

18 MR. BLEASBY: The lamp that most people will be
19 familiar with is the old style of, what we call, T-12
20 lamp. It's an inch and a half in diameter. It's a
21 relatively inefficient light source, and there's still
22 about 48 million of those in ceilings in California not in
23 this building I'm glad to say.

24 (Laughter.)

25 DIRECTOR LOWRY: I'm looking up at what we have.

1 (Laughter.)

2 MR. BLEASBY: The next step in efficiency is what
3 in this building, and this happens to be a clear lamp so
4 that you can actually see the mercury content, if you can
5 find it. But, in fact, this is the lamp that's used in
6 this building. This is a T-8, one inch diameter lamp.

7 Now, there is a progression in efficiency between
8 the larger diameter lamp and the smaller. But the latest
9 lamps out of the manufacturers' stables, all of them, is a
10 lamp called a T-5, which is only five-eighths of an inch
11 in diameter. And this is even more efficient than its
12 predecessors.

13 What is more, this lamp is designed to operate on
14 an electronic ballast. It's a high output version, so
15 that the light output from this lamp is as much as two of
16 these or two of these.

17 Now, if you think about this from the point of
18 view of resources, this lamp, the T-5, has only 21 percent
19 of the material content, and only nine percent of the
20 volume. Now, these things affect the manufacturer,
21 shipping, warehousing, handling, installation and
22 disposal. So it would seem that this is the
23 environmentally preferable lamp Compared with the two
24 predecessors.

25 One of these will do the job of two of these or

1 two of these. And yet because California's TTLC test is
2 based on a mercury density, which is obviously higher in
3 this smaller lamp, this lamp becomes the hazardous waste
4 even though it is the most environmentally friendly. As I
5 only have one more slide, I'll do that from the podium
6 here.

7 --o0o--

8 MR. BLEASBY: We recommend that DTSC should act
9 swiftly to adopt a regulation that classifies all mercury
10 as hazardous and requires them to be recycled.

11 All mercury containing lamps should be included
12 in the universal waste program to make that processes
13 easier. And any broadening of initiatives to other
14 wastes, other than lamps, should not delay the expeditious
15 action on lamps.

16 Thank you very much.

17 DIRECTOR LOWRY: All right, thank you.

18 I think I'll hold questions and address them a
19 little bit later. I think Mr. Sullivan is next.

20 MR. SULLIVAN: Good afternoon, I'm Pat Sullivan
21 from SCS Engineers. I'm here today representing the
22 Municipal Solid Waste Landfill Industry and that would be
23 the so-called Class 3 landfills, where we see referencing
24 the DTSC Draft mercury report, and specifically the
25 disposal of waste in those landfills.

1 (Thereupon an overhead presentation was
2 presented as follows.)

3 MR. SULLIVAN: Obviously, the question that
4 you're trying to answer, we're all trying to answer as it
5 pertains to municipal solid waste or the Class 3
6 landfills, is there a threat to the environment from
7 releases of mercury that are placed in those landfills?

8 As a general rule, the solid waste industry does
9 not want to see contaminants placed in their landfills.
10 They're ultimately responsible for any releases from that
11 site including long-term liability that can span 30 years
12 or greater even after the landfill is closed and they're
13 no longer gaining any revenue from that landfill.

14 However, we do not want to see any restrictions
15 or prohibitions placed on the disposal of things in
16 landfills that are based on data that we believe to be
17 flawed and do not really truly represent whether
18 landfill's are putting mercury into the environment.

19 Next slide, please.

20 --o0o--

21 MR. SULLIVAN: I'm not going to spend any time on
22 who I am. I was introduced at the beginning. Let's move
23 to the next slide.

24 The sources of mercury that we'd be looking at
25 from the releases from a landfill, these potential sources

1 include mercury emissions from the working face of the
2 landfill, that is the point at which refuse is disposed
3 into the landfill; mercury emissions from landfill gas,
4 whether that landfill gas is uncontrolled or controlled,
5 that is mercury being entrained in the landfill gas, which
6 is primarily methane and in some way, shape or form being
7 emitted into the environment; and finally mercury
8 containing leachate, leachate from the landfill and
9 affecting groundwater beneath the landfill.

10 Those are the three categories that I believe are
11 addressed in DTSC's mercury report. And I'd like to make
12 a little commentary at least on the industry's view of the
13 information presented in the report as it they pertain to
14 those pathways of release.

15 Next slide.

16 --o0o--

17 MR. SULLIVAN: In terms of mercury impacting
18 groundwater, we have several issues with the report as it
19 currently stands and the conclusions that are drawn from
20 the data that were reviewed for this report. And we find
21 them to be in someways misleading and in some ways
22 conflicting both with data sources presented in the report
23 itself as well as with data sources that weren't reviewed
24 for this report that are available from the industry.

25 There are several studies that are cited in the

1 report as being evidence that landfills are leaching
2 mercury into groundwater. However, in some of the cases
3 the studies seem to indicate that there is some release.
4 Other of the studies seem to indicate maybe there are not
5 releases of mercury into groundwater.

6 One of the major issues that we have is, there
7 seems to be no attempt made to determine whether we are
8 looking at a legacy issue, waste that has been disposed
9 into the landfills, older landfills and maybe possibly
10 those landfills have leached mercury into the groundwater.

11 Remember, this regulation, or at least the
12 proposals that are set forth in the report dictate what we
13 plan to do currently or into the future to stop these
14 materials from getting into the landfills and preventing
15 these leachate.

16 So in other words, we're not sure that the old
17 data, the data that is reflective of old sites in some of
18 the legacies of the past are reflective of the landfills
19 of today and what those landfills might actually be
20 leaving in the environment.

21 DIRECTOR LOWRY: Your point would be that the
22 landfills are better built now than they were previously?

23 MR. SULLIVAN: Absolutely. And I'll get into in
24 more detail. One of the data sources that's cited
25 pertains to landfill leachate. And one thing that needs

1 to be remembered is pollutants do end up in landfill
2 leachate. The industry will never deny that fact. The
3 point is in some ways that's where want it to be, because
4 that leachate, particularly on today's control landfills,
5 is controlled and collected and does not leach into the
6 groundwater, so that the mere fact that mercury may be
7 found in leachate does not any way, shape or form mean
8 that that landfill has impacted groundwater with mercury,
9 and there needs to be distinction drawn between the two.

10 In terms of the mercury detections in
11 groundwater, in several of the cases that were cited in
12 the report, we've looked at the groundwater data and we
13 actually cannot see the difference between the so-called
14 detection that appears to be attributable to the landfill
15 and what might be considered background from mercury in
16 that same area, so that it really needs to be an
17 evaluation of -- the mere detection of mercury beneath our
18 landfill and the groundwater does not mean that mercury
19 came from the landfill itself. You need to look at the
20 background concentrations as well.

21 In the area of emissions, EPA did several
22 reports. A 1997 study is cited in the DTSC report
23 recently as part of their urban air toxic strategy.
24 They've also evaluated sources of mercury.

25 Municipal solid waste landfilled ended up very

1 low on the list in the range of .001 percent or
2 one-one-thousandth's of a percent of the total mercury
3 emissions into the environment.

4 The DTSC report seems to, in some ways, ignore
5 that point and how low the mercury emissions from
6 landfills are and points to one single study, the
7 so-called Florida Landfill Study, as the tell-tale sign
8 that all the previous work must be in error and that
9 landfills indeed must be putting more pollutants into the
10 environment.

11 Well, the Florida study has some serious flaws.
12 Number one, it pertains to the fact that we're dealing
13 with a limited number of landfills, a couple of sites in
14 Florida, a snapshot in time, no information provided on
15 these landfills to say whether they're old sites, new
16 sites, have they taken waste, do they have a legacy of
17 other types of waste in those landfills to even know
18 whether the data that was derived from those studies said
19 it represents or can even relate to landfills in
20 California or could relate to the landfills that are
21 modern in today's world.

22 Also, there are some issues with analytical data
23 in the way the analyses were done. The EPA is actually
24 undertaken this study that I'll go into later on looking
25 at mercury emissions from landfills on a grander scale and

1 they actually chose not to sue some of the methods that
2 are used by the Florida study.

3 So I think we need to be careful with the Florida
4 study. And in my read of the Current DTSC report is that
5 seems to be the one black mark that's being used against
6 landfills to demonstrate the need they must be serious
7 sources of emissions. And, in fact, the previous data was
8 wrong and they are emitting more mercury into the
9 environment than we thought they were.

10 DIRECTOR LOWRY: When you say previous data being
11 wrong, are there studies which we cite as showing that
12 there is not a release into the air that we're disputing
13 in that report or because I don't remember reading that?

14 MR. SULLIVAN: Basically, you were citing the
15 1997 study that EPA did on mercury emissions. And where
16 landfills ended up significantly in my view low on the
17 totem pole in terms of the total amount of mercury put in
18 the environment.

19 And then a comment is made based on the review of
20 the Florida study in that well, maybe we've underestimated
21 the amount of mercury being put out by landfills based on
22 what we see in this Florida study.

23 What we're saying is you need to take a hard look
24 at the Florida study and you need to take an even harder
25 look at the other data that's available in the industry

1 that you did not review.

2 DIRECTOR LOWRY: Right. You have a list of those
3 studies and reports that you can provide to us?

4 MR. SULLIVAN: Certainly. We'll get into what
5 the industry is willing to provide to help this process
6 along.

7 But anyway, the final conclusion in looking at
8 the report where we felt the data were too limited and
9 could support the conclusions that you've drawn, you're
10 not quite there yet and there's a lot more data out there
11 that you didn't look at, that we think may change your
12 view on some of the issues here.

13 Next slide.

14 --o0o--

15 MR. SULLIVAN: These are some of the things that
16 we like to mention, I'll try to be a little brief, in
17 terms of our conclusions, that we might have drawn from
18 the report and then also draw from the other data that we
19 have available in the industry.

20 There's been a lot of success in reducing the
21 amount of mercury. I think the report goes into good
22 detail on the successes in reducing the amount of mercury
23 going into landfills in the first place.

24 I'm not sure the data that you've evaluated is
25 even reflective of that fact. And what I mean is, again,

1 if you don't know the landfill you're looking at and the
2 source of the data, you cannot tell what whether you're
3 looking at a legacy mercury that was placed in years ago
4 that is now being released to the environment, or is it
5 reflective of the current landfills of today that are
6 designed and operated in a lot more environmentally
7 conscious fashion.

8 DIRECTOR LOWRY: Is it your position that there
9 should be no restriction on the disposal of mercury in
10 municipal solid waste landfills in California?

11 MR. SULLIVAN: Not exactly. What we're saying at
12 this point is we do not believe that the data support that
13 conclusion at this time. However, if there is a
14 determination that indeed landfills are leaching mercury
15 at significant quantities, quantities that you feel are
16 worthy of regulation, then, again it's in all our best
17 interests not to let that mercury into the environment.
18 We want the decision to be made for the right reasons.

19 DIRECTOR LOWRY: Given the data that we do have,
20 put yourself in my Chair. What limits, if any, should
21 this Department put on, or the Legislature whatever, on
22 the disposal of mercury in the solid waste landfills Class
23 3 landfills in California? What standard should we apply?

24 MR. SULLIVAN: We'd like to see a greater focus
25 on source reduction. This report seems to go --

1 DIRECTOR LOWRY: That's not the question. What
2 restrictions on receiving waste with mercury? Forget
3 source reduction all that. What should we stop from going
4 through the gate or what conditions should we put on it
5 from going through the gate of the landfills that you
6 represent?

7 MR. SULLIVAN: If your data -- you believe shows
8 that landfills leach mercury into the ground water --

9 DIRECTOR LOWRY: Yeah, suppose it doesn't.
10 Suppose we have all the data that you know about right
11 now, should we do anything?

12 MR. SULLIVAN: In my view, at this point, after
13 making whatever efforts you made to stop the mercury along
14 the way, at a landfill that still arrives at the gate, I
15 believe can be disposed in a municipal solid waste
16 landfill, particularly the modern landfills of today
17 without significant threat of release to the environment.

18 DIRECTOR LOWRY: How many of the landfills in
19 California would qualify as a modern landfill that are
20 still operating, 100 percent, 50 percent?

21 MR. SULLIVAN: I think it's probably somewhere in
22 between the two, and every day gets more and more sites.
23 The way your report sites that many of the landfills in
24 California were actually built prior to Subtitle D and
25 then makes sort of an assumption that that must mean

1 they're still all unlined. That's not really true. They
2 may have a portion of the landfill that is unlined, it's
3 obviously closed. But the wastes that are going in today
4 and the wastes that you would be regulating if you decide
5 to make a decision here, are going into fully lined RCRA
6 subtitle D cells at those landfills.

7 So in reality, rather than a vast majority of the
8 landfills being unlined the current disposal at those
9 landfills is going into lined Subtitle D compliance
10 landfills. I really don't know the percentage, but I'd
11 put it in the 75 to 80 percent range.

12 And every day more of the older sites close or
13 they close an individual cell at site that's on line, and
14 the next cell that is permitted has to be RCRA Subtitle D
15 compliant. So every year you're going to see less and
16 less landfills that are unlined.

17 What the industry might consider would be looking
18 at the unlined sites and restricting the disposal of
19 wastes into the unlined landfills that are still in
20 existence and still taking waste versus a complete
21 restriction of all Class 3 disposal.

22 DIRECTOR LOWRY: I didn't mean to derail your
23 presentation.

24 MR. SULLIVAN: That's okay. The other issue we
25 want to point out pertains to the amount of mercury

1 released from the landfills. Let's assume all these
2 things have happened. What is the amount of mercury
3 that's released from landfills via the various routes of
4 release versus the total amount of mercury that we believe
5 is being released into the environment causing the
6 problems that we all know are real, and where does that
7 put it on the scale? Does that put it very high on the
8 list. We think it will put it extremely low on the list,
9 and is that where the regulatory efforts should be focused
10 at the bottom tier of sources of mercury rather than some
11 of the larger sources of mercury that are clearly
12 identified in the regulatory documents. Without going
13 into those industries, we all know who they are.

14 Where do landfills fall? We think we they fall
15 very low on that list. And we think the regulations maybe
16 should be reflective of the fact that as lot of the
17 regulations are, you go after the major contributors and
18 it has to be cost effective before you go all the way down
19 to the lower tiers. So that's an issue we're concerned
20 about.

21 There's a lot of industry data out there that
22 hasn't been reviewed, and we would welcome an opportunity
23 to provide that with the distinction that you need to look
24 at data that's reflective of the modern landfill that you
25 would be looking at in terms of future regulations on the

1 landfill industry.

2 Next slide.

3 --o0o--

4 MR. SULLIVAN: We've already gone over this
5 point. We believe that actually most of the disposal here
6 in California is under RCRA Subtitle D, and that it's kind
7 of misleading again to say that because a landfill began
8 operation prior to Subtitle D, that it's still putting
9 trash into unlined cells. That is not the case. In fact,
10 it's actually the opposite case.

11 One thing that's not mentioned in terms of the
12 potential reduction or at least a change in the mercury
13 emissions at landfills is landfill gas air quality
14 regulations. The report mentions the California
15 Integrated Waste Management what regulations pertain to
16 landfill gas as a reason why landfill gas collection
17 control systems are put in place. That is, actually in
18 California particularly, a very minor reason why gas
19 system are put in.

20 In fact, the major reason that those are put in
21 place are the air quality regulations. And now we have a
22 federal regulation that was promulgated in 1996 and is now
23 being implemented across the street that requires
24 landfills to put in gas collection control. And that
25 regulation as are a lot of the district level regulations

1 in California are focused towards the largest of
2 landfills. And that's an issue you need to look at.

3 The report indicates that maybe only 50 percent
4 of the landfills in California have gas collection
5 control, sort of us making another assumption that that
6 means 50 percent are uncontrolled and somehow 50 percent
7 of the mercury is being emitted without going through a
8 control system. That's really not true.

9 The largest of landfills taking the most waste
10 are the ones that are controlled. The ones that aren't
11 controlled are the smallest of sites. So they need to
12 look at the size of the facility not just the percentage
13 of the facilities that have control or don't have control.

14 And when we put all that together, we come to the
15 conclusion that the regulatory decisions that you've
16 looked at and I know there's a variety of them, but
17 particularly the one that pertains to not allowing any
18 disposal of mercury-containing wastes in a landfill. Even
19 if that were feasible, just from a logistical standpoint
20 to stop everything that goes into a Class 3 landfill, we
21 don't think the data or evidence that's presented in the
22 report supports that decisions at this time.

23 Next slide.

24 --o0o--

25 MR. SULLIVAN: But, you know, with that in mind,

1 to provide that data.

2 DIRECTOR LOWRY: You have it.

3 MR. SULLIVAN: And with that in mind, though, we
4 want to make sure that we're able to make the distinction
5 between the -- we're concentrating on the current disposal
6 practices and the current requirements, and that we don't
7 hold us -- that we don't base a regulation that's going to
8 affect future disposal on data that's representative of
9 only past occurrences that are now no longer the case.

10 DIRECTOR LOWRY: Can you give me the intellectual
11 leap, which I'm having difficulty making, is there anyway
12 for us to measure in the future what's happening on the
13 outlook in the past?

14 MR. SULLIVAN: Sure there is. We've been
15 collecting data, particularly on landfill gas and
16 groundwater over time.

17 DIRECTOR LOWRY: But you've just told us not to
18 look at what's happened over time.

19 MR. SULLIVAN: Well, I'll get to that point.
20 We've looked at the data from the past to the current, so
21 we've been able to track, in some way, the implementation
22 of a variety of regulations that have occurred and how
23 they've changed our practices. And we've seen distinct
24 changes and improvements in the contamination.

25 For example, we have data for several -- a series

1 of sites in the southern California area that have been
2 looking at toxics in the landfill gas over about a 15-year
3 period.

4 Within that period is the RCRA Subtitle D and
5 State requirements to start diverting waste, load
6 checking. If you look at the data, you see a significant
7 decrease over time in the toxic concentrations in the
8 landfill gas. And we believe that's representative of the
9 fact that we stopped putting a lot of those waste streams
10 in the landfills.

11 So we go and we collect data that was on landfill
12 gas from the 1980s, which the EPA has actually done, we
13 think that overstates by a significant margin the toxics
14 that you're going to find in landfill gasses from the
15 waste that's put in from this point forward.

16 DIRECTOR LOWERY: It was my impression that you
17 were you opposed to diversion at the gate, which
18 apparently is responsible for this decreasing slope of
19 toxics in the gas that you just talked about.

20 MR. SULLIVAN: Well, I'm not sure the diversion
21 at the gate is the reason that the concentrations have
22 decreased. In fact, I would think that if you're relying
23 on the load check at the landfill to catch your
24 contaminants, that's not where more of them get stopped.
25 Where most have been stopped are at source reduction and

1 recycling. And it happens much prior to the gate.

2 And that's what we'd like to see the focus on.

3 It's worked on other pollutants. We think you can work on
4 mercury. So that's what we'd like to see.

5 DIRECTOR LOWRY: Okay, I understand your point.

6 MR. SULLIVAN: So the last point I want to make
7 this is that the U.S. EPA is actually right in the midst
8 of a project to collect additional data on mercury
9 emissions from landfills, it's called the CRADA project,
10 which is the Cooperative Research and Development
11 Agreement with the industries and with the EPA, to go out
12 to a series of landfills all over the country and mercury
13 is the major focus of this study as well as a few other
14 pollutants.

15 That data will become available and we'd like to
16 at least make it known that this study is ongoing and that
17 the reason that study is ongoing is the EPA themselves
18 believes that the current, again, aren't reflective,
19 because they haven't updated it in a decade or more and
20 that they are now updating that data.

21 DIRECTOR LOWRY: Do you have an idea of when that
22 study will be completed?

23 MR. SULLIVAN: The field work is starting to
24 begin and will begin, I believe in the next several
25 months. When the data will be ready and when the final

1 report is ready, it is an EPA study, so it's going to take
2 its sweet time.

3 DIRECTOR LOWRY: All right.

4 MR. SULLIVAN: I'd guess we're a year away from
5 seeing something.

6 DIRECTOR LOWRY: All right.

7 MR. SULLIVAN: In conclusion, as I mentioned,
8 municipal solid waste landfills don't want see pollutants
9 in there because they're ultimately responsible for it,
10 and if there's a way to, through source reduction and
11 recycling, to limit the amount of any contaminant, whether
12 it be mercury or anything else from getting into the
13 landfills, we are for it.

14 But we do not want to see the landfill industry,
15 in effect, receive a black mark for its supposed releases
16 into the environment unless the data support that
17 conclusion. And if the data do support it, whether it's
18 for an unlined landfill or, you know, whether all
19 landfills, you know, then we'll deal with the
20 ramifications. But in particular for the modern landfills
21 of today we don't believe the data will support a
22 conclusion that landfills should not be allowed to receive
23 any mercury whatsoever.

24 DIRECTOR LOWRY: All right. Thank you very much
25 for coming. We look forward to working with you.

1 Mr. Abernathy.

2 MR. ABERNATHY: Good afternoon.

3 (Thereupon an overhead presentation was
4 presented as possible.)

5 MR. ABERNATHY: It's always a challenge to follow
6 somebody who knows what they're taking about.

7 (Laughter.)

8 MR. ABERNATHY: Mr. Sullivan, I think did a good
9 job defending landfills.

10 I must open my remarks, though, by saying you've
11 missed the point, sir. The point is not so much about
12 what happens to mercury once it's in the landfill. It's
13 about what happens to mercury from volatile sources before
14 it ever gets to the landfill and before that 50 ton
15 compactor machines rolls over it and covers it with six
16 inches of daily cover.

17 --o0o--

18 MR. ABERNATHY: I'm going to confine most of
19 these remarks to lamps, because lamps are what I deal with
20 for a living. They're also the most volatile, the most
21 fragile source of mercury. They're also almost
22 everywhere. And while the remarks about the solid waste
23 industry may be true, the solid waste industry, in my
24 opinion, has not done a very good job of actively
25 attempting to divert lamps from the garbage.

1 I have a photograph of a garbage truck in Alameda
2 county dumping a lode of lamps in the municipal landfill
3 there. Now, I happen to know that landfill and it's a
4 pretty good one. But when lamps came out of that truck
5 and started breaking by the dozens and by the hundreds and
6 then when that compactor rolled over those boxes and broke
7 hundreds more, the mercury in the leachate and the mercury
8 in the methane wasn't the big issue. The issue was where
9 did that mercury go before the daily cover got there.

10 --o0o--

11 MR. ABERNATHY: Here's some areas where we have
12 haven't seen studies. We can talk about studies and we
13 can challenge studies all day. I would be very careful
14 before I challenged Dr. Steve Lindbergh's studies though,
15 because Steve Lindbergh who is with Oakridge National Labs
16 and assisted with the Florida studies for the last several
17 years is indeed one of the more knowledgeable scholars on
18 mercury and what happens to it when it starts migrating.

19 Steve Lindbergh's studies talk about what happens
20 to mercury in the dumpster, in the garbage can, in the
21 compactor truck, what happens to mercury at the working
22 phase, what happens to mercury at the transfer station,
23 what happens when that rear loader backs up to the
24 transfer station and dumps its load out on the floor
25 before the bulldozer pushes it into the separation

1 equipment. That's where the mercury is an issue.

2 So, in deed, you might not see mercury in the
3 groundwater from a landfill as being the issue, but indeed
4 it is the issue because of its potential to be released
5 and migrate down wind.

6 How many studies have we seen that looked at
7 mercury coming out of solid waste containers, rollofs,
8 compactors, rear loaders, side loaders? How many studies
9 do we have that shows what happens when hundreds of
10 millions of lamps break in dumpster and rollofs and then
11 it rains?

12 What studies do we have that talk about what
13 happens when the building janitor at night breaks the
14 lamps into the garbage can, because that's what his job
15 description says he's got to do? We don't have those
16 studies.

17 So I submit that while the solid waste industry
18 has an important role to defend its integrity, that's not
19 the pathway that mercury is following vis a vis the need
20 to control mercury from lamps.

21 --o0o--

22 MR. ABERNATHY: Now, in California, we've had a
23 pretty low recycling rate for the last -- well, for as far
24 back as I can recall, over 12 years. We've been, up until
25 last year, we were only recycling about ten to 12 percent

1 of all the lamps in the State, and that left a pretty high
2 noncompliance rate. And I'm going to, in a couple
3 minutes, I'll talk about, at least my theory, as to why
4 that recycling rate is somewhat low here in California.

5 --o0o--

6 MR. ABERNATHY: DTSC believes that as many as 70
7 percent of all the lamps in this state may be generated by
8 either households or conditionally exempt small quantity
9 generators and therefore might not even be impacted by the
10 conditions of the Federal Universal Waste Rule.

11 When this State proposed its own universal waste
12 rule, it proposed some additional stringency, which we
13 like, because it would have closed the loopholes for
14 CESQGs, and that was one way we thought that the recycling
15 rate might actually begin to increase other than just by
16 some token amounts.

17 When we look at the criteria though, we see that
18 all we've ever used is TCLP, TTLC, STLC. And we've used
19 these numerical targets, and we've seen an overwhelming
20 number of scientists and analytical people around the
21 country complain that lamps don't behave as chemists
22 predict they would behave in a laboratory.

23 I attended a seminar with Dr. Simmons from DTSC
24 about two years ago in Washington where EPA had a similar
25 workshop. And Dr. Simmons was one of the people in the

1 room who was nodding his head with others and said you
2 know mercury is an anomaly. It doesn't do what you think
3 it's going to do. It doesn't act like you think it's
4 going to act. It doesn't test in concentrations that you
5 would predict, because it's an anomaly.

6 So our bottom line is or the bottom line is we
7 need to be dealing with levels of mercury that are more
8 consistent with the ranges that some of the people talked
9 about this morning, some of the State agency people, where
10 we're looking at a range of micrograms nanograms, we're
11 looking at parts per billion and parts per trillion.
12 That's where mercury becomes most relevant in the
13 environment. That's where we see how lamps breaking in
14 indiscriminantly in solid waste containers contribute to
15 the TMDL.

16 So what I've said here is that, yes, this is a
17 apples and oranges. TMDL is not the same as TCLP. But if
18 you look at table 1.4 in the report, there's a very nice
19 summary of a whole bunch of different government agency
20 standards, federal drinking water, EPA OEHHA, ocean
21 standards, it oes on and on and on.

22 In all cases, those numbers are extremely low
23 relative to the amount of mercury that is in any one
24 mercury lamp.

25 Just a short aside while I'm on that page, which

1 is page 23 of the report, I believe there is still a typo
2 on that page regarding the units for table 1.4. It says
3 units are in micrograms per liter and then it shows
4 symbolically, micrograms per milliliter. So I believe
5 there's a few zeros missing somewhere on that, which even
6 amplifies my point even more.

7 Next slide, please.

8 --oOo--

9 MR. ABERNATHY: When we have a universal waste
10 rule that people pay attention to, we have seen in the
11 last couple of years an 80 percent increase in the amount
12 of recycling. Now that 80 percent gets us to a whopping
13 20 percent recycling rate today.

14 We would like to see, as would EPA, and I'm sure
15 most people here, would like to see the overall recycling
16 therefore compliance rate get up to 60 to 80 percent of all
17 the lamps. That may not be doable, because there may
18 always be exemptions.

19 What this means in California is that there's
20 about 35 or 40 million lamps per year that need to be
21 recycled about that are not being recycled. Now, that's
22 35 or 40 million lamps that are breaking in the garbage.
23 I'm not suggesting that means it's a problem for the
24 landfills, but they're breaking in the garbage, so it is a
25 problem for TMDL and worker exposure.

1 DIRECTOR LOWRY: Mr. Abernathy, if I could ask
2 you a question here. What do you do in the recycling
3 industry when you break a lamp? I assume at some point
4 the glass is broken, but with respect to air emissions and
5 transpiration.

6 MR. ABERNATHY: Are you talking about a
7 controlled system or in an uncontrolled breakage?

8 DIRECTOR LOWRY: No I'm talking about in the
9 recycling environment of the folks that you represent what
10 do the recyclers do?

11 MR. ABERNATHY: In this country almost all of the
12 recyclers use a dry process whereby the lamps are put into
13 a box, a machine. They're broken in there and a
14 significant amount of room air is pulled into that machine
15 at the same time the components are being jostled around
16 and separated.

17 It is the air that flows across the broken
18 components at a high velocity that strips away the
19 phosphorous coating which Mr. Bleasby talked about and
20 most of the mercury.

21 And it happens very quickly. The faster the
22 better for better separation. And the airstream which now
23 does contain mercury and other things must be filtered in
24 system and also through some treated carbon so that when
25 that air comes out it's free from mercury.

1 DIRECTOR LOWRY: Right.

2 MR. ABERNATHY: Does that answer your question?

3 DIRECTOR LOWRY: It does, thank you.

4 MR. ABERNATHY: I think we're ready for the next
5 slide.

6 --o0o--

7 MR. ABERNATHY: My theory, at least, supported by
8 the recycling industry is that we have a lower recycling
9 rate here currently than in other states because we've had
10 for at least 12 years a policy which encouraged people to
11 throw lamps into the municipal solid waste. I'm talking
12 about the 25 lamp per gate policy. I'm talking about the
13 multiple interpretations of that policy in which people
14 were confused about what to do with lamps, when they had
15 to be manifested, when they didn't, when they needed
16 permits, when they didn't, when The HID lamps became
17 relevant in the context of being different than standard
18 fluorescent lamps.

19 I have worked with this agency for many, many
20 years and there have been several attempts at some decent
21 regulatory change, which we felt would have improved the
22 overall situation. But here we are, in this month where
23 we really don't have anything much more significant than
24 the federal universal waste rule, which was adopted by
25 emergency.

1 Next please.

2 --o0o--

3 MR. ABERNATHY: Mr. Bleasby talked about some
4 other states with more stringent policies and I won't
5 repeat all of that. Just know that there are several
6 states with more stringent policies and some states doing
7 a better job of recycling than we are here.

8 One comment I'll make about Florida since Mr.
9 Bleasby mentioned it, is that Florida doesn't exempt more
10 than ten lamps per month, which means they don't really
11 acknowledge CESQGs.

12 They have another interesting standard in
13 Florida, it's a mercury removal standard. It talks about
14 treatment. It says if you're going to treat and recycle
15 things with mercury in Florida, you must recover all but
16 one part per million of the amount of mercury you started
17 with.

18 That's a treatment standard. It's a performance
19 standard and it's a way that Florida ensures there is no
20 sham recycling going on. It's a standard we happen to
21 support.

22 Next slide, please.

23 --o0o--

24 MR. ABERNATHY: I guess in summation, I'll say
25 that what we do, what I personally do and what our

1 organization does is all about outreach. It's all about
2 providing information for people to tell them that number
3 one, there is mercury in lamps, number two, there is
4 something you can do with it besides throw it away.

5 A couple of other people who talked this morning
6 said that the biggest problem we have is that people
7 simply don't know that there is mercury in some of these
8 products. And I know that most building janitors in the
9 states of California don't know that what they're throwing
10 in the garbage has mercury in it.

11 So let's tell them. Let's tell them and let's
12 trust that they'll do the right thing, and I think we'll
13 see some increased recycling.

14 --o0o--

15 DIRECTOR LOWRY: For those of you who can read
16 this slide, please raise your hand?

17 (Laughter.)

18 MR. ABERNATHY: I'll summarize this slide.
19 That's a terrible color, isn't it.

20 (Laughter.)

21 MR. ABERNATHY: Increased Regulation for lamps
22 means two things. It means that more lamps are regulated
23 and more lamps shouldn't be put in the garbage. But it
24 also means less regulation for those people who chose to
25 do the right thing with lamps. And this slide is about

1 business opportunities for people who chose to do the
2 right thing.

3 What this means is that there are business
4 opportunities to make money by energy service companies,
5 contractors, demolition people, maintenance people,
6 janitor people, the solid waste industry and virtually
7 anybody who wants to be involved in diverting lamps from
8 the garbage. There is money to be made today in
9 California doing this.

10 --o0o--

11 MR. ABERNATHY: The last slide, I'm not even
12 going to talk about this slide, because it's -- I put it
13 up on the screen so I can talk about something not related
14 to it. And that is the number of lamps that could be
15 diverted is significant. It's about 40 to 50 percent.
16 The number of people involved in that diversion is not
17 very significant today.

18 What this means is that more and more people
19 without regulatory burden can get involved and we'll see a
20 doubling or tripling of the recycling rate, which brings
21 me to the last point which is capacity.

22 The recycling industry, both inside and outside
23 of California, has capacity for more lamps. They're only
24 operating on eight-hour shifts today. They can easily
25 operate on 24-hour shifts. They're only operating with

1 one recycling system per TSD facility. That can easily be
2 changed. And the amount of lamps that leave the State is
3 significant. More than half of all of California's lamps
4 that get recycled are being recycled outside of
5 California.

6 So the economics of transportation isn't a big
7 factor. In fact, as Mr. Bleasby said nor is the economics
8 of recycling in total, because it's still only one percent
9 of the total life cycle of the lamp. So we have capacity.
10 We need to see all lamps recycled.

11 Low mercury lamps are essentially no different.
12 We're going back now to looking at TMDL issues, to fish
13 tissue studies that we have numbers. Low mercury lamps
14 are significantly no different than high mercury lamps
15 relative to the low level of concern in our sediment and
16 in our fish tissue and in our human update.

17 Thank you.

18 DIRECTOR LOWRY: All right. Thank you for your
19 comments.

20 Okay. Next we have Patricia Becker from Philips
21 lighting.

22 Ms. Becker.

23 (Thereupon an overhead presentation was
24 presented as follows.)

25 MS. BECKER: Thank you. ALTO Products, that's

6 The lamps that we make in Salina, Kansas, which
7 is where we make the lamps for the United States adheres
8 to that standard. The lamps that we make we Bangpoo,
9 Thailand for other parts of the world adhere to that
10 standard. It's part of our companywide policy.

11 All of the ALTO linear fluorescents in California
12 are designed -- actually all of the ALTO linear
13 fluorescents in the United States are designed to meet
14 California compliance. They meet TCLP, the STLC, TTLC and
15 the aquatic bioassay test.

16 As far as our linear fluorescents are concerned,
17 if they don't meet California requirements, then we don't
18 introduce them as ALTO until we are able to meet that
19 California requirement.

20 --o0o--

21 MS. BECKER: Ninety-five percent of the linear
22 fluorescents have been converted to ALTO. Additional ALTO
23 types are being developed all the time and introduced as
24 they come on line. When we introduce ALTO then we take
25 away the product that is considered a hazardous or has the

1 higher mercury content.

2 Philips worldwide has, what we call, a company
3 Eco-Vision. It is an effort worldwide to reduce the
4 amount of mercury in our products to reduce usage of
5 energy in our factories, to reduce the water use in our
6 factories, to reduce the amount of packaging that we use.

7 Philips is company worldwide that is conscious of
8 the environmental effort. We're making this effort
9 worldwide. Philips encourages our distributors to partner
10 with the recyclers. We're doing that in California and
11 later this month a letter is going out to all of our
12 distributors from Philips asking them, encouraging them to
13 develop to partner up with recyclers because it is our
14 corporate policy that we recommend recycling our lamps,
15 even though they do meet the nonhazardous classification
16 for California.

17 DIRECTOR LOWRY: Do you have, at your finger
18 tips, a comparison of the number of grams or whatever unit
19 is appropriate of mercury in an ALTO four-foot lamp as
20 opposed to one which doesn't meet those standards?

21 MS. BECKER: The ALTO four-foot lamp in a T-8
22 version has less than 3.5 milligrams. The other T-8
23 versions on the market are 10 to 12 milligrams.

24 DIRECTOR LOWRY: All right. And you heard the
25 first commenter's statement about you put in so much and

1 you use it up, so life goes on. Do you have studies, and
2 there's been some controversy about how long do they last,
3 with the amount of mercury in there? Are they publicly
4 available studies that are recognized in the scientific
5 community which talk about comparisons of length of life
6 of these types of lamps?

7 MS. BECKER: We have several studies ourself, but
8 we're also in the process right now of having an
9 independent lamp study done, by, you know, an independent
10 company. To this date, we have over 700 million of the
11 ALTO fluorescent products distributed throughout the
12 United States, sold throughout the United States.

13 Those lamps have performed as the standard lamps
14 have performed given the life that we need, in a lot of
15 cases, even more life than what we had predicted, than
16 what they're rated at. They're rated at 20,000 hours.

17 When that study is available -- at this point, in
18 time we have more than 11,000 hours on the lamps with no
19 failures at all. According to the standards mortality
20 curves, we should have some failures.

21 DIRECTOR LOWRY: Um-hmm. Is this you turn it on
22 and you leave it on for 20,000 hours or you turn it on and
23 off or how is the study performed?

24 MS. BECKER: Lamps are tested three hours, 20
25 minutes off. That's a standard testing pattern.

1 DIRECTOR LOWRY: And so you're sort of half way
2 through that study in terms of --

3 MS. BECKER: Yes.

4 DIRECTOR LOWRY: When do you expect it to be
5 done?

6 MS. BECKER: Well, based on 8,700 hours a year,
7 I'd say we're going to have another year.

8 (Laughter.)

9 MS. BECKER: And you can follow it as it goes
10 along. According to the mortality curve, we should start
11 to see lamps falling off now. To this date, we have not
12 lost any and this is done by an independent testing lab.

13 DIRECTOR LOWRY: Okay, go ahead.

14 MS. BECKER: Right now regulations in California
15 require the recycling of all hazardous lamps. And we've
16 heard the national average of recycling rate is
17 approximately 24 percent, 20 percent somewhere in that
18 neighborhood, so we know no we're in the right place based
19 on the total number of lamps sold and then the information
20 from the lamp recyclers as to what they've recycled.

21 Enforcement of current regulations would
22 significantly increase this recycling.

23 --o0o--

24 MS. BECKER: Recyclers for California are located
25 in Hayward, in Ontario and in Phoenix. Philips has

1 encouraged recycling of its products for many years. As a
2 matter of fact when we talk to customers, when we talk to
3 distributors, we always recommend recycling as your first
4 option.

5 --o0o--

6 MS. BECKER: Currently mercury levels from
7 Philips and other manufacturers demonstrate the
8 possibility of producing nonhazardous lamps. Other
9 manufacturers have incentive to lower mercury levels to
10 save their market share.

11 And source reduction should be a goal of the
12 regulation. We don't want to take that incentive away to
13 go into source reduction. If you make all lamps hazardous
14 with no distinction between nonhazardous and hazardous,
15 then you take that incentive away.

16 What happens is there becomes financial pressure
17 on factories to cut corners and to make lamps a little
18 less expensively. And some of the things that could
19 happen or one of the things that could happen is the
20 amount of mercury in that lamp could increase instead of
21 going down, which is where we want it.

22 --o0o--

23 DIRECTOR LOWRY: I didn't follow that. Can
24 you go over that again.

25 MS. BECKER: Well, if you take away the yard

1 stick or the goal to reach, like the 20 parts per million
2 in California, if you take away the distinction between
3 hazardous and nonhazardous, and everything has to be
4 hazardous, then a manufacturer who is putting money and
5 effort into producing a lamp that meets your 20 parts per
6 million no longer has to put that money there. So when
7 the financial people say cut back on your expenses at the
8 factory level, one of the things that can happen is that
9 stops, the mercury levels could go up.

10 DIRECTOR LOWRY: I see what you are saying. What
11 if we go to five parts per million, two parts per million,
12 who would that be?

13 MS. BECKER: That's quite feasible, if you did a
14 step approach to that where you phase it in, because
15 there's continuing, there's ongoing research, you know,
16 it's going on. We know we can reach the 20 parts per
17 million. We have not only developed lamps but another
18 manufacturer has lamps that meets your requirement, so we
19 know it's achievable. And we're achieving it with the
20 full rated life, the full package of a light output.

21 DIRECTOR LOWRY: Okay, go ahead.

22 MS. BECKER: The mercury level in products should
23 be looked at from a public policy standpoint, as well as a
24 risk based standpoint. Some of your risk based numbers
25 are soft, containment assumptions, which can skew the

1 conclusion, public policy, like regulatory goals should
2 encourage source reduction.

3 --o0o--

4 MS. BECKER: And we already spoke about this, but
5 the distinction between nonhazardous and hazardous lamps
6 is important. Recycling nonhazardous lamps under the
7 current regulation reduces the costs of storage, training
8 and handling for endusers. We have one large facility, a
9 customer of ours that disposes of over 250,000 lamps a
10 year. And they just figured recycling the ALTO lamps
11 because of the reduced cost in storage, training and
12 handling saves them \$60,000 a year.

13 TTLC is a more stringent test. We cannot be
14 influenced by additives like the TCLP test can. It's a
15 more true test.

16 --o0o--

17 MS. BECKER: The future of mercury source
18 reduction and increased recycling is up to DTSC and the
19 legislature. Like I said, before, phasing down may be a
20 possibility. Research is ongoing. And there's continual
21 change being made, more ALTO products being added.

22 California hazardous waste regulations are the
23 toughest in the nation and a model for other jurisdictions
24 considering this question.

25 Thank you.

1 DIRECTOR LOWRY: All right. Thank you for your
2 comments. And I shall add that those of you who have made
3 a presentation, if there's anything you wanted to add
4 either at later hearings or submitting written materials,
5 we'd certainly be happy to get them.

6 I think next is Teresa Pichay. I got it right
7 this time, from the California Dental Association.

8 MR. PICHAY: The California Dental Association
9 represents approximately 70 percent of the 25,000 licensed
10 dentists in the State.

11 The license dentists include retired dentists,
12 dental school faculty, inactive dentists, dentists who are
13 employees and dentists in private practice. The majority
14 of the CDA members are generally dentists in private
15 practice.

16 The Association also has specialty members, such
17 as oral surgeons, periodontists, pediatric dentists,
18 public health dentists, orthodontists, endodontists,
19 prosthodontists, and oral radiologists. Some of these
20 specialists do not place or remove fillings.

21 The majority of private practice dentists employ
22 fewer than ten people. Dental professionals and the
23 California Dental Association are committed to the
24 treatment and elimination of oral disease and to the
25 overall improvement of public health.

1 Dentists treat diseases and disorders of the
2 mouth and jaw. During the past 100 years, the oral health
3 of the American public has improved tremendously, and
4 individuals learned the importance of preventative oral
5 hygiene, regular dental checkups as well as the role of
6 fluoride has in preventing tooth decay.

7 However, dentistry continues to face significant
8 challenges. Last year in conjunction with the U.S.
9 Surgeon General's first ever report on the oral health of
10 American, the California Dental Health Foundation released
11 a report on the oral health of the State's children. From
12 this report we learned that California children have twice
13 as much untreated decay as children in other states. Only
14 ten percent of eight year olds in the State get sealant
15 for the permanent first molars.

16 One-third of the parents of pre-schoolers give
17 their children bottles as they go to sleep, a practice
18 that promotes tooth decay. And only 30 percent of the
19 states citizens receive the benefits of fluoridated water.

20 The dental profession and the State of California
21 are working hard to reverse these situations, but it is
22 difficult. The DentiCal program alone is inadequate to
23 address the problems, and a reimbursement level of 50
24 cents on the dollar for the actual cost of the care
25 dentists provides is a disincentive for many providers.

1 Increasing access to dental care, especially for children,
2 is a high priority for the Association, as well as the
3 State.

4 It is important for us to be able to provide as
5 much benefit as possible for the few dollars that are
6 allocated for access programs. This is a significant
7 reason for the continued use of amalgam fillings, because
8 this material is inexpensive compared to alternative
9 materials that provide needed health benefits.

10 Dental amalgam and resin based composites are the
11 materials most used for fillings. Other restorative
12 materials are listed on the dental materials facts sheet a
13 document approved last month by the Dental Board of
14 California.

15 Amalgam has been used for nearly 200 years, while
16 resin based composites have been a dental restorative
17 material for approximately 30 years. It was not until
18 recently, however, that resin based composites became
19 acceptable for use in the teeth in the posterior areas or
20 the back of the mouth.

21 In 1998 the American Dental Association convened
22 a meeting of dental materials experts. A consensus
23 statement was developed on the use of resin based
24 composites in posterior restoration. The statement
25 summarizes the state of the science and points to areas

1 where scientific research should be directed in order to
2 improve the current material.

3 This statement also discusses the conditions
4 underwhich resin based composites should not be used,
5 namely large fillings, conditions where the dentist is
6 unable to control moisture and patient sensitivity to the
7 material.

8 Recent dental insurance data indicates that use
9 of resin based composites is increasing while amalgam use
10 is decreasing. We suggest the reasons for this change are
11 that resin based composites are a better esthetic
12 material, and changes have been made to improve its
13 durability and ease in placement.

14 However, technical factors that limit the broader
15 use of resin based composites include, one, the material
16 cost, two, the process to place resin based composites
17 requires more time and technical skill, and, three,
18 manufacturers change product formulas frequently,
19 therefore it is difficult to predict how a specific resin
20 based composite will behave over time.

21 We also point out that dental schools only
22 recently began incorporating instruction on placement of
23 resin based composites into their curriculum.

24 Dental research has been directed to the
25 development of materials and methods to eliminate or

1 diminish the effects of oral disease and disorders.

2 Current research projects include the development of a
3 vaccine to prevent formation of cavities, and the
4 development of a method to grow teeth.

5 Current research projects also include
6 development of better resin based composites and
7 nonmercury metallic filling material.

8 The American Dental Association's Pffanberger
9 Research Center works in conjunction with scientists at
10 the National Institute of Dental and Craniofacial
11 Research, one of the National Institutes of Health and the
12 National Institute of Standards and Technologies, an
13 agency of the U.S. Department of Commerce on the research
14 and development of improved and new dental materials.

15 The efforts of scientists in the nonprofit and
16 public sector are also joined by researchers who work for
17 companies that manufacturer dental materials. Their work
18 is shared at scientific meetings held around the world.

19 I want to emphasize to you that the practice of
20 dentistry is not based on anecdotes and traditions, but is
21 largely based on peer-reviewed science and proven methods
22 and treatment.

23 So where is dentistry today on the issue of the
24 continued uses of amalgam? Science has provided a new
25 filling material that is esthetically superior and

1 improvements continue to be made in the material in the
2 areas of durability, ease of placement and cost, yet
3 amalgam continues to be used by most dentists.

4 It is the opinion of several dental materials
5 experts, however, that the use of amalgam will continue
6 the decrease, but not as rapidly as some people predicted
7 when the new filling material was introduced. Science, as
8 well as patient considerations, will dictate the future of
9 amalgam.

10 On our comments on the draft mercury report, a
11 general comment is that we noticed that the Agency for
12 Toxic Substances and Disease Registry's 1999 toxicological
13 profile on mercury was not utilized. This document
14 contains pertinent information on the health effects of
15 all forms of mercury and how humans may be exposed to
16 mercury.

17 One of those areas that was not included in the
18 DTSC report was the cultural uses of mercury, and that is
19 discussed the ATSDR report. The ATSDR report does review
20 the current science on the toxicity of mercury and
21 amalgam, which is that the body of scientific research
22 does not link dental amalgam to any significant adverse
23 health effects.

24 A couple of specific comments on Section 4, pages
25 63 to 64.

1 DIRECTOR LOWRY: Before you get there, does the
2 ATSDR report deal with whether the amalgam is hazardous to
3 the person receiving the treatment?

4 MR. PICHAY: Yes.

5 DIRECTOR LOWRY: Does it deal with all the waste
6 issues of discarding the amalgam when you go through the
7 process?

8 MR. PICHAY: Yes.

9 DIRECTOR LOWRY: So it covers both subjects?

10 MR. PICHAY: Yes.

11 DIRECTOR LOWRY: All right, thanks.

12 MR. PICHAY: Sections 4, pages 63 to 64. CDA
13 disagrees with the following statement found on page 64
14 second paragraph.

15 Quote, "Since labor appears to be a
16 major factor for the added cost of
17 composite fillings, encouraging dentists
18 to accept and work with composite
19 fillings may indirectly reduce amalgam
20 waste," end quote.

21 This statement proposes to interfere in a
22 relationship in a relationship patient and health care
23 provider. It assumes that dentists are uninformed about
24 dental materials. The choice of treatment and dental
25 restorative material belongs only to the patient and

1 treating dentist. The dentist recommendation for
2 treatment is based on his or her training, experience and
3 knowledge.

4 Active licensed dentists are required to take 50
5 hours of continuing education every two years. Dentists
6 are aware of the alternatives to amalgam and of the
7 clinical situations that indicate that an amalgam
8 alternative is an appropriate treatment choice.

9 On Section 5, page 81, we are surprised to see
10 that the State-authored document attributes a quote about
11 California law to the web site of hypnotist. The law as
12 described in this quote does not exist. We are
13 disappointed that unsubstantiated opinions are --

14 DIRECTOR LOWRY: Can you reference that again. I
15 want to read this.

16 (Laughter.)

17 MR. PICHAY: Section 5, page 81.

18 DIRECTOR LOWRY: Eighty-one?

19 MR. PICHAY: Um-hmm. You have to look at the
20 footnotes at the end of the section.

21 DIRECTOR LOWRY: What footnote are we looking at?

22 Are we going to hear from the National
23 Association of Hypnotists?

24 (Laughter.)

25 DIRECTOR LOWRY: So what footnote number are you

1 looking at.

2 MS. PICHAY: Let me find it for you.

3 DIRECTOR LOWRY: All right, great.

4 MR. PICHAY: Forty-six or 47.

5 DIRECTOR LOWRY: All right. The statement, "The
6 use of mercury in dental amalgams is being seriously
7 debated worldwide." You do not?

8 MR. PICHAY: No, we do not. However, there's, I
9 think, also a reference there that bans are being
10 considered and that rumor has been going around for many
11 years. There is no ban on amalgam in any country in the
12 world.

13 DIRECTOR LOWRY: Okay, go ahead. I interrupted
14 you.

15 MR. PICHAY: We are disappointed that
16 unsubstantiated opinions are cited in this report and we
17 suggest that they be eliminated. We highly recommend that
18 the authors refrain from using opinion as fact and on the
19 subject of the use of amalgam, utilize more reputable
20 documents and statements, such as those from the U.S.
21 Public Health Service, the Food and Drug Administration,
22 the Centers for Disease Control and the Agency for Toxic
23 Substances and Disease Registry.

24 For the record, Senate Bill 134 signed by the
25 Governor last month requires dentists to provide the

1 dental materials fact sheet to each patient prior to the
2 start of any dental restoration. This includes fillings,
3 whether amalgam or composite, crowns, veneers, onlays and
4 inlays. Dentists must obtain from the patient a signed
5 acknowledgement of receipt of the fact sheet.

6 A general comment on the estimates provided on
7 the contribution of dental amalgam to the amount of
8 mercury and solid waste and wastewater. The numbers are
9 not definitive.

10 The survey results of the POTWs that actually
11 sampled wastewater from dental offices vary greatly. The
12 variability of the numbers has been attributed to several
13 factors, dental equipment, dental procedures performed,
14 the use of other mercury-containing products in the
15 office, the size of the dental practical and the age of
16 the facility.

17 CDA continues to be concerned that sampling
18 results from a handful of dental offices are extrapolated
19 to ascertain the total contribution of several hundred or
20 even several thousand dental practices. We would like
21 this report to include statements regarding the
22 variability of wastewater sampling results and the
23 contributing factors.

24 Some comments on the options to regulate mercury
25 containing wastes. The Association supports a regulatory

1 framework that encourages small businesses to implement
2 reasonable pollution prevention practices that result in
3 significant reductions in targeted waste. The State
4 should emphasize and encourage the recycling of
5 mercury-containing products.

6 My comments start with the waste types listed on
7 Table 6-1 on page 92, and the options for hazardous waste
8 identification and management. The listing of Dental
9 Amalgam Scrap we understand includes scrap left over from
10 the placement of fillings, scraps from the removal of
11 fillings and scraps caught in standard traps and filters.
12 These are identified as hazardous but are exempt from
13 hazardous waste management regulations if they are managed
14 as scrap metal for recycling. The options discussed in
15 this section would not change the identification and
16 management of this waste.

17 The next dental waste listed on the table is
18 Fines. These are described as quote, "typically not
19 caught by special traps and are being discharged to the
20 POTWs," end quote. And recently it was clarified that it
21 is to be regulated as hazardous waste.

22 This description is unclear to us. If this
23 description is what the Department intends, the
24 implication for approximately 20,000 dental facilities is
25 that they can no longer discharge wastewater to the

1 sanitary sewer and would have to haul the water to a
2 treatment facility. The cost to these small businesses
3 would be enormous and it would have a negative impact on
4 the provision of oral health care.

5 The benefit/cost ratio of this characterization
6 and required management is very low in our opinion, and
7 has not been sufficiently researched by the Department.
8 The Western Lake Superior Sanitary District, for example,
9 has estimated a cost of recovering dental amalgam fines to
10 be as high as \$682,000 for each pound of mercury
11 recovered, and that the amount of mercury recovered from
12 all dental offices in Minnesota would total a little over
13 five pounds.

14 Is it possible that the Dental Amalgam Fines
15 listed here are intended to be the fines that pass through
16 the standard dental traps and filters and are captured by
17 special amalgam removal technology?

18 There are systems currently on the market that
19 capture fines and even soluble mercury. However, 100
20 percent mercury removal has not been achieved by any
21 device. The media that captures and holds these fines,
22 CDA agrees should be characterized as hazardous waste. We
23 would recommend this waste be managed as a universal
24 waste, because, one, the waste source is a single easily
25 identifiable industry and, two, device manufacturers have

1 made arrangements for recycling this waste that's making
2 west management considerations simpler for the dental
3 office.

4 DIRECTOR LOWRY: What's the level of efficiency
5 you get with those traps?

6 MR. PICHAY: The manufacturers claim as high as
7 99 percent, but actually, which I talk about in the next
8 paragraph, actual use is much lower, but over 90 percent.

9 DIRECTOR LOWRY: Right.

10 MR. PICHAY: A U.S. EPA verification protocol is
11 being developed for these special technologies and it can
12 be assumed that more effective technologies can be
13 developed. However, can the typical dental office afford
14 the technology?

15 I will, again, refer you to the article written
16 by the Western Lake Superior Sanitation District that I'm
17 submitting with my comments.

18 I thank you for this opportunity to provide you
19 with information on dentistry and dental materials and
20 would like to leave you with a few comments about
21 dentistry and pollution prevention.

22 Ten years ago the issue of amalgam's impact on
23 the environment entered the dental radar screen. Across
24 the country, dentistry used legislative and legal action
25 to prevent what appeared to be regulation without

1 scientific basis. Dentists are obvious targets because
2 they have been bombard with negative publicity over the
3 continued use of mercury.

4 During these ten years, dentistry has also worked
5 with pollution prevention specialists toward improving the
6 knowledge base on the dental contribution to wastewater
7 and on methods to significantly reduce pollutants of
8 concern.

9 The CDA has participated in productive meetings
10 with the Mercury Council of the San Francisco Regional
11 Water Quality Board and the Bay Area Pollution Prevention
12 Group. Dentistry is learning the needs of pollution
13 prevention specialists, while at the same time the
14 specialists are learning why dentists do what they do.

15 We believe the ultimate pollution prevention
16 strategy for dentistry includes the following: all
17 individuals should brush and floss after every meal.

18 DIRECTOR LOWRY: I knew flossing would come into
19 this?

20 (Laughter.)

21 MR. PICHAY: Visit their dentists regularly, and
22 have access to community water fluoridation. The overall
23 goal of dentistry and pollution prevention is essentially
24 the same, improving the public's health.

25 Thank you.

1 DIRECTOR LOWRY: Thank you for your comments.

2 Okay, next on my list is Mark Madden, the Scrap
3 Recycling Industry, is that right?

4 MR. MADDEN: Yes. I'm Mark Madden and I'd just
5 like to take a moment to floss before I do this.

6 (Laughter.)

7 MR. MADDEN: Mark Madden representing the
8 California Institute of Scrap Recycling Industries. This
9 is a group of roughly 100 or more companies, metal
10 recyclers throughout California, some very small
11 companies, some very large companies, even some very
12 medium companies, who recycle and process hundreds of
13 thousands of tons of metal each year, representing
14 thousands of jobs and millions and millions of dollars of
15 sales of raw materials for steel mills and smelters
16 throughout literally the world. It constitutes one of
17 California's largest exports.

18 I wanted to begin by saying one fundamental
19 thing, which is that what the commonality among all these
20 small, medium and large companies is that none of them use
21 or generate mercury.

22 As you may know, current law, with respect to
23 hazardous materials and appliances and motor vehicles or
24 autobodies says the following and I'm reading from what
25 was AB 847, a bill which a number of people in this room

1 thankfully cooperated and participated in its enactment as
2 well as its predecessor AB 1760, the original metal
3 discard act.

4 But it says the following, "Materials that
5 require special handling shall be removed from major
6 appliances in vehicles in which they are contained prior
7 to crushing or transport or transferring to a bailer or
8 shredder for recycling,"

9 And 42167 specifically enumerates which materials
10 they are. They are, Sodium Azide canisters, encapsulated
11 PCBs, chlorofluorcarbons, CFCs, used oil and please note
12 mercury found in switches and temperature control devices
13 in major appliances.

14 Let me move ahead for just a minute before I go
15 back and talk about how we implement this law, by saying
16 that SB 633, which was enacted in this pass session and to
17 be in effect on January 1st, speaks about mercury switches
18 in automobiles.

19 However, that legislation simply asked for the
20 voluntary removal of such in cooperation of the
21 dismantlers who are principally involved removing all
22 these other materials, because they are, in fact, the
23 source of our material. That is, junk in abandon cars
24 typically go to auto dismantlers who part them out. And
25 then before, as a prior condition of them sending to us,

1 must remove all these materials previously enumerated.

2 The only exception appears to be mercury switches
3 in cars and we have to ask the simple question how come?
4 We have another question and it goes something like this,
5 the same legislation, 633, speaks about the prohibition of
6 mercury switches in car trunks and hoods by, I think,
7 2005. But there are other sources of mercury in vehicles,
8 how come the bill is silent about that?

9 DIRECTOR LOWRY: Are any Legislators in the
10 audience?

11 (Laughter.)

12 MR. MADDEN: I'll take any answer.

13 DIRECTOR LOWRY: Any lobbyists who want to
14 volunteer for some of that?

15 Go ahead. Sorry to interrupt.

16 MR. MADDEN: And finally, let me describe for
17 those who are not familiar, and I think Ms. Yep and Mr.
18 Gin are actually very familiar, with how cars are
19 shredded. Cars come to us typically speaking flat, that
20 is that they are flattened for the purposes of
21 transportation.

22 I make that point because to attempt to remove
23 anything from a flattened car literally requires the jaws
24 of life on each of the hundreds of thousands of vehicles
25 that we receive during the course of a day. We couldn't

1 possibly do this.

2 Moreover, we are not hazardous waste generators.

3 We do not have the ability or capacity to do that, and the

4 spirit, the very spirit of AB 847 and 1768, its

5 predecessor, were, in fact, to draw a very clear line

6 between people who are, in fact, equipped to remove these

7 materials, that is the dismantlers and car shredders who

8 receive the material free of hazardous materials in order

9 to do what they do.

10 Now what do they do? They take these flattened

11 cars and put them in what constitutes a giant meat

12 grinder. One with something like a 6,000 horsepower

13 engine and literally fractures the car through this grate.

14 And there's a small correction, the interior temperature

15 of that car shredder does not come anywhere close to the

16 temperatures that people were alluding to in the previous

17 discussion this morning.

18 What happens after that is that the metals are

19 separated out, both the ferrous and nonferrous and what's

20 left, the famous auto shredder residue, has separated

21 itself and created further the requirements of this very

22 agency, with polysilicon to treat the trace elements of

23 cadmium, chromium, copper, lead, mercury, nickel and zinc.

24 And then ultimately after it's tested and approved, it

25 goes to landfills.

1 So I guess in response to the question, the
2 omnibus question that asked before about standards, we are
3 confident that the current standards properly protect
4 public. I want to introduce our consulting toxicologist
5 Dr. Brent Finley who has a few things to say about that.

6 DR. FINLEY: Yeah, I'd like to say one brief
7 comment. In the draft DTSC report there will be options
8 for classification of mercury-containing wastes that
9 involves revisiting the regulatory threshold numbers the
10 DTLCs and the STLCs.

11 And that the basis of those values are described
12 briefly. I would suggest that if, in fact, this is going
13 to be seriously considered as an option that some
14 discussion has to be given as to whether or not these
15 values are considered to be health protective today. And
16 if they're not, what is the evidence for believing that
17 they need to be revisited.

18 Because I could make the argument that they are,
19 in fact, protective of the environment. And at least some
20 of the evidence we've seen today suggests that we don't
21 have a big leaching problem with mercury in landfills. So
22 in subsequent versions of this report, I would hope to see
23 that kind of discussion.

24 DIRECTOR LOWRY: All right.

25 MR. MADDEN: Just continue for one more minute to

1 simply say this, that we're very vigilant in trying to
2 protect the environment. We are the recyclers and proud
3 of it. We are very vigilant in trying to keep hazardous
4 materials out of our facilities. As a matter of fact, we
5 don't accept fluorescent lights, mercury vapor lights,
6 associated fixtures or ballasts, but we can inspect for
7 that, because when they come into the yard, we can
8 actually look in the truck and take a look and see.

9 And if we see one, they take a U-turn. They do
10 not enter our facility. If it's radioactive, they take a
11 U-turn and do not enter our facility.

12 Here's the problem, when we're dealing with
13 vehicles which are flattened, we can't see it. It's not
14 possible for us to see the actual mercury switches or any
15 other source of mercury that may be in a vehicle. But we
16 do know this with respect to appliances, we only deal with
17 people who certify that they have removed these materials
18 before they come to us, just like they do for CFCs and
19 PCBs.

20 We have a legal right to rely on them sending
21 materials free of hazardous materials. Under Senate Bill
22 633, we have no reason to rely on it, because it's purely
23 voluntary. And we have to simply ask the same question
24 again, how come?

25 DIRECTOR LOWRY: Are you precluded from entering

1 into a contract with the folks who supply you that stuff?

2 MR. MADDEN: We are not precluded from it, but a
3 contract is a private matter. And, as you know, you
4 cannot contract to do something illegal. What I mean to
5 say is this, we have no -- we have only civil resource
6 against those people. With respect to say, for example,
7 PCBs Or CFCs, if somebody was sending us this material and
8 representing that they had removed it, the first person
9 we'd talk to is you. We'd ask for an enforcement.

10 We might have a civil remedy, but at least we
11 have legal remedy as well under the scenario that you're
12 envisioning. If it's purely voluntary under the law, we
13 only have a civil recourse.

14 DIRECTOR LOWRY: All right. So if you were to
15 have a clause in the contract where you're a supplier of a
16 crushed automobile stated and I certify under penalty of
17 perjury that I've taken out all mercury switches and so
18 forth, you get one that has mercury switches?

19 MR. MADDEN: If we could see them. That's, I
20 guess, is the practical matter.

21 DIRECTOR LOWRY: That's a secondary problem.

22 MR. MADDEN: Well --

23 DIRECTOR LOWRY: The second problem of this
24 scenario.

25 MR. MADDEN: Well, what's our recourse?

1 DIRECTOR LOWRY: You're liquidated damages in
2 your contract, I don't know.

3 MR. MADDEN: I understand that, but there's no
4 legal recourse. We can't ask them to stop. We can't tell
5 them they're defeating the law. We can't say that they
6 are, you know, violating the law. We can't complain to
7 you. We want to complain to you. We want you to enforce
8 that action.

9 DIRECTOR LOWRY: Yeah. It's your opinion we
10 don't have any enforcement authority over that particular
11 issue.

12 MR. MADDEN: It seems that way, and I would be
13 more than happy to be stood corrected, but if it's a
14 voluntary matter, it does not look like you have the
15 rubric of legality there.

16 DIRECTOR LOWRY: Right. I think the Legislature
17 is obligated me to encourage that.

18 (Laughter.)

19 MR. MADDEN: I think they have, yes. Somehow,
20 encourage is a little different word than enforce.

21 DIRECTOR LOWRY: Right. Anything else you want
22 to add, sir?

23 MR. MADDEN: No, I appreciate the opportunity.

24 DIRECTOR LOWRY: Thank you for coming.

25 And our last industry spokesman is Mr. Eric

1 Almborg from Saftey-Kleen Buttonwillow if I'm not
2 mistaken.

3 MR. ALMBERG: That's correct.

4 (Thereupon an overhead presentation was
5 presented as follows.)

6 MR. ALMBERG: Thank you for the opportunity to
7 provide comments on the subject today. As has already
8 been said several times, I believe, I think the
9 Department's done a really -- an excellent job in pulling
10 this data together. And it's a very thorough job and
11 there's a lot of good information in the document. And I
12 think everybody here appreciates the opportunity to be
13 able to comment on that at the start of this process.

14 Next slide.

15 --o0o--

16 MR. ALMBERG: The first thing I'll say is I think
17 the commercial waste management industry supports pretty
18 much what's the standard hierarchy of best practices for
19 waste management. And, of course, that starts out with
20 source reduction and recycling, and then you end up at
21 treatment and disposal.

22 The facility I happen to work at is primarily
23 involved in treatment and disposal of hazardous waste, but
24 Safety-Kleen itself is, through the service centers and
25 the household hazardous waste activities is involved in

1 certainly the recycling end of things.

2 I certainly would recommend that DTSC increase or
3 continue the strong efforts towards the source reduction.
4 Obviously, that makes sense all the way across the Board,
5 if you can keep it from getting into the waste streams and
6 whether it's a municipal solid waste facility or a
7 facility like ours or somewhere else in an uncontrolled
8 situation.

9 If it doesn't -- if it's not fair to begin with,
10 then I think we're all better off. So I think that's
11 definitely -- you're moving in that direction and that's
12 to be commended.

13 Next slide.

14 --o0o--

15 MR. ALMBERG: As far as the Class 1 landfill,
16 which, again, that's one of the things, of course, that
17 we're most familiar with relative to my place of
18 employment, it certainly gives us, as is pointed out in
19 the report, when you end up at the point of disposal,
20 which of course is, at that point, something is not
21 feasibly recyclable or economically recyclable when you're
22 talking treatment and disposal, the Class 1 landfill
23 option gives you the superior protective liners which is
24 in the design and permit releases.

25 I heard a little bit about the lack of methane

1 production, which is coupled with the limited vapor
2 transmission, should reduce the opportunities for methyl
3 mercury to form as well as for the release of such a
4 compound.

5 There's, of course, enhanced monitoring at your
6 Class 1 facilities would be that groundwater and air
7 monitoring. And, of course, it's already been referenced
8 about leachate control and removal systems, which serve to
9 further control the Migration of leachate which may or may
10 not contain mercury.

11 And then, of course, the Class 1 landfills have
12 very stringent cap design and enclosure process. And all
13 those things go to give that probably the most protective
14 disposal option that's available. There certainly is, as
15 I'm sure the Department's well aware of, a large amount of
16 Class 1 disposal capacity in California and the western
17 United States. That having been said -- next slide.

18 --oOo--

19 MR. ALMBERG: -- I'm going to skip around a
20 little bit here just to try to confuse everybody. I'm
21 going to go to the second bullet first. I would not be in
22 favor of using the broad based approach of simply anything
23 with mercury becomes hazardous.

24 I think that from a generator's perspective, I
25 can say a couple problems that we can get into. One would

1 be that the detection limit -- well let me backup just a
2 minute. One of the pros to that approach was that testing
3 wouldn't be required. And I think there's certainly a
4 number of waste streams, especially the consumer products,
5 that people will know if mercury is in their product and
6 so that there won't require testing. You'll know it's
7 there. If there's a switch there, it's there, they've got
8 to deal with it.

9 Those, of course, are not the bulk of the
10 generators that I see at the Buttonwillow facility. The
11 ones that we work with testing a pretty much -- in many
12 cases, be required. Because if we're talking just
13 characterizing our waste or we're talking, you know,
14 trying to get down to establish if there's any mercury in
15 there at all, they're going to be doing the analysis to
16 key what their situation is on their waste stream. And
17 they may have already done it in an existing waste stream,
18 brand new waste stream, they'll be doing the testing.

19 And the thing I worry about there is that sort of
20 throws it back into the lab and detection limits. And if
21 we're -- I think there's already been some comments about
22 the one molecule of mercury issue, and, you know, worry
23 about getting into a lab where if we can detect down to 50
24 parts per billion on a solid, this lab can do it there,
25 and some other lab can -- their standard detection limits

1 may be higher or lower, you kind of get a different
2 playing field that's determining whether something is
3 going to be considered hazardous or not if we do the
4 broad-based approach and just anything with mercury in it,
5 flat out, is hazardous. So I have some real concerns
6 about that.

7 Then that being said, let's go to the number
8 three bullet. There is, though. There definitely is when
9 you talk about consumer products with mercury. I think
10 those are the things that should be prioritized as far as
11 source reduction or recycling.

12 So I guess I'm willing to say certain things
13 ought to be even painted with more of a broad-brush
14 approach to ensure that they're in the system and they
15 aren't ending up in landfills, they are being recycled or
16 they are being phased out entirely with alternatives being
17 used in place of mercury.

18 That can be don't, you know, with the expanded
19 universal waste rule too as appropriate. So I guess I'm
20 kind of saying that to me it seems like it makes sense to
21 look at the paint brush for some of the things like the
22 consumer based products, but probably not everything.

23 Where does that leave the other things?

24 I guess my first bullet, if as the report lays
25 out, you know, mercury is a serious issue, and I believe

1 that it is. I would suggest that we consider going back
2 and looking at what's appropriate relative to the
3 hazardous waste characterization. You know, the PTOCs,
4 the STOCs. I know it's been some time since Mr. Cam -- I
5 mean Bart Simmons was involved in coming up with that
6 process.

7 (Laughter.)

8 MR. ALMBERG: And, you know, maybe it's a good
9 time to relook at that and see relative to mercury, should
10 there be some different levels of set DTOCs and STOCs.
11 You know, what would be -- you know, what's the current
12 risk assessment data say, what's the current science say.
13 You know more than likely obviously you'd set lower levels
14 that's going to, you know, catch more of the mercury into
15 the system. You know, perhaps not all of it, but you --
16 again there's, to some extent, may be a bit of a trade off
17 there.

18 And something else that we kind of kicked and I'm
19 just going to throw this out. You know, it may or may not
20 be something that would be beneficial, but with that's the
21 last bullet there on an interim approach, which if those
22 of us are familiar with the lead 350 PPM rule where, you
23 know, basically if you generate a waste stream, just for
24 everybody else's benefit, I know you all up there know
25 about that, if you generate a waste stream that has a TTLC

1 of over 350 parts per million lead, it can still pass the
2 STLC and be actually nonhazardous waste based on the STLC/
3 TTLC criteria because the TTLC for lead is 1,000.

4 However, it has to be disposed of in a Class 1
5 facility. And I'm understanding the approach on that was
6 based on the issues associated with lead and increased
7 toxicity issues that have come to light over the years.

8 There might be some kind of an approach there
9 that can be done relative to the mercury. It might be an
10 option to consider. It has the benefit of putting
11 material into a higher management scenario based on what
12 other levels are appropriate, but it does not add the
13 layer of regulation as a hazardous waste that hazardous
14 waste does, you know, generator fees manifesting, record
15 keeping. And also it doesn't generate the taxes that, you
16 know, generators would have to pay if they shipped
17 something to a class 1 disposal facility as a hazardous
18 waste.

19 So that's just -- I wanted to throw that out.
20 That's, you know, something that might have merit
21 somewhere when in this process.

22 DIRECTOR LOWRY: Can we go to your third bullet
23 for a minute, which says consider volume and concentration
24 as well. What do you mean by that?

25 MR. ALMBERG: Well, what I was really after there

1 was something that's kind of been alluded to was probably
2 the most bang for the buck, and, you know, one area that
3 comes into my mind is any place you've got pure mercury,
4 your switches in automobiles is a perfect example, where
5 you've got you over the entire car, maybe it is indeed a
6 nonhazardous level, but you do have the pure mercury there
7 basically what you're talking about, pure elemental
8 mercury, and which would seem to have, you know, a
9 significant risk associated with, you know, being
10 mismanaged. So that would be one standpoint.

11 Another standpoint would be if there is such a
12 thing that you can get your hands around, you know, where
13 is the volume of mercury, and I'm thinking more along the
14 bulk waste that's generated, not so much again the mercury
15 switches, but where is the bulk of the mercury if there is
16 such a description that can be applied. You know, maybe
17 that would be the type of thing to go after first and that
18 could possibly be done with different STLCs, TTLCs.
19 Again, if it warranted scientifically to capture some of
20 those waste streams.

21 DIRECTOR LOWRY: All right.

22 --o0o--

23 MR. ALMBERG: On other issues the generator
24 education is a must. I shared this story with Bart after
25 the lunch break this morning. I had a conversation with a

1 generator Monday, this week Monday, where, you know, he
2 was explaining how because his particular waste stream was
3 not hazardous by virtue of TTLC and therefore no further
4 testing was necessary.

5 And, you know, of course this particular analysis
6 was such that it could have failed the STLC based on the
7 TTLC concentration, and so we kind of went around and
8 around on that and we ended up getting his laboratory on
9 the line, and they basically confirmed what I was telling
10 him that you needed to go another step on that to fully
11 characterize your waste stream.

12 And this is, you know, of course a long time
13 after -- you know, STLCs and TTLCs have been around for a
14 long time, and here I just had the conversation Monday
15 with the generator.

16 The Lead 350 Rule, you know, whenever that comes
17 up, generally for the most part, you know, in our waste
18 acceptance process when we raise that issue to a customer,
19 you know, that's something that other than the big
20 customers that have their own environmental staffs, that's
21 always sort of a new thing. And I guess where I'm heading
22 with that, I know that AB 1332, which was offered by
23 Assemblyman Lowenthal, requires, you know, the Department
24 to do education on basically how to characterize your
25 waste.

1 And, you know, I'm not really sure, you know,
2 where we are in that whole process, but I just would
3 encourage that whatever comes -- what the final rules look
4 like and wherever we end up that if there are significant
5 changes, which I suspect that there will be, that it would
6 be really beneficial for the Department to help in any way
7 it can relative to educating the generators. And, you
8 know, I mean we'll certainly do our part through when they
9 approach us about wanting to manage their waste stream and
10 we have to hit them upside of the head and get, you know,
11 on the same track there.

12 I mean that literally, of course. But it would
13 and it is something that it's amazing sometimes the things
14 that come up that people or generators -- again I'm not
15 talking about your big major generators, but ones that
16 typically the mid-size and smaller ones that are behind on
17 things.

18 I guess the variances, my only comment on that
19 was, I guess, whatever is going to come out this process
20 of course, we need to be thinking about what kind of
21 variances would be issued. I mean, I know, you know right
22 now primarily it seems like a lot of the variances that
23 get issued on managing waste maybe in a different way than
24 it was characterized is between the State agencies. And
25 we just want to encourage DTSC to be very consistent in

1 that regard and to think about it. You know, I mean the
2 regulations get -- can certainly get tighter as far as
3 mercury goes. I'm sure there will be, you know, requests
4 for variances.

5 In fact, we already sort of were talking about
6 one associated with CalTrans and lead mercury waste today.
7 So I'm sure that would be something that will come up.

8 That's pretty much what I've got to say today.

9 DIRECTOR LOWRY: All right. Thank you very much
10 for your comments.

11 Is there anyone on this particular panel who
12 would like to add anything based on comments from me or
13 other panelists?

14 Go ahead.

15 DR. FINLEY: This will take sixty seconds just to
16 follow up on the previous speaker. On the issue of
17 prioritizing the waste stream. I agree that that is an
18 option that should be laid out in subsequent drafts in
19 this report. I don't really see that as an option as the
20 report sits now. It seems like it's sort of an all or
21 nothing.

22 DIRECTOR LOWRY: I don't think it was mentioned
23 in that manner.

24 DR. FINLEY: I mean several of the speakers have
25 hit on the fact that it would probably be impractical to

1 try to regulate all mercury containing waste streams in
2 some sort of prioritization scheme which include volume
3 and concentration I think makes sense, but also the
4 characteristics of the stream, whether or not this
5 evidence is causing environmental impacts in waste dealt
6 with now, whether it would be risk reduction if it was
7 classified as a hazardous waste and sent to a Class 1
8 landfill, et cetera.

9 I think the shredded autos is a good example of
10 how you might work through one of those in a case study.
11 I mean it's fairly low volume. It routinely passes the
12 STLC, TTLC test. It's sent to landfills. And like I said
13 earlier, it's not like they have a big mercury landfill
14 problem. But, again, I think this prioritization scheme
15 is something that is probably where we would end up going.

16 DIRECTOR LOWRY: All right.

17 Anyone else?

18 We've had some very valuable comments. I want to
19 thank all of you for coming, and I encourage you to stick
20 around for the next part of this program, which will be a
21 brief break and then we'll have comments from the floor
22 including prepared comments from Jane Williams
23 representing an environmental organization. So it is now
24 3:00 o'clock, let's get back here 3:15.

25 (Thereupon a brief recess was taken.)

1 DIRECTOR LOWRY: All right if we can persuade
2 everyone to take a seat, please.

3 All right thank you for coming back. We were in
4 this hi-tech room attempting to locate an overhead
5 projector. We don't have one, nor does building
6 management, nor do any of the boards or departments that
7 we contacted seem to have one.

8 The general world is you -- one would then say at
9 this point, we'll have to resort to more primitive means,
10 which I guess we will, although it's because we have such
11 hi-tech stuff here that we don't have one. I also
12 noticed -- I guess you're taking all this down aren't you?

13 (Laughter.)

14 DIRECTOR LOWERY: This is like a casino, there
15 are no clocks on the walls, and I don't know why that is
16 either.

17 But we are honored to have with us Jane Williams
18 of the California Communities Against Toxics who's
19 successfully navigated the California airports and is here
20 representing that organization with America comments on
21 the report.

22 After she is finished we have five or six people
23 who have Indicated a wish to speak in the public comments
24 section of this workshop.

25 So welcome, Jane, and the floor is yours

1 MS. WILLIAMS: Thank you. I come to you today
2 actually wearing two hats as the Executive Director of
3 California Communities Against Toxics and as a Board
4 Member of the Mercury Policy Project, which is a group I
5 helped start that works on national mercury policy issues.
6 And now actually works internationally as well. There is
7 sort of a void about four years ago people were focusing
8 on different parts of the mercury problem, but weren't
9 really looking at overall policy issues.

10 So I know my colleagues before me hopefully did a
11 fairly good job of summarizing some of the most recent
12 information on mercury and toxicity and the problems with
13 human health impacts.

14 But I think one of the -- some of the key points
15 that we all need to keep in mind when we're talking about
16 regulating mercury bearing wastes, is that mercury is now
17 a persuasive human health problem. Because of widespread
18 environmental contamination, we have contamination and
19 real body burden problem in humans.

20 Mercury is a potent neurotoxin and it has
21 alarming impacts on the unborn fetus and after birth in
22 breast milk contamination as well.

23 Mercury, as you know, is a naturally occurring
24 element. It is naturally emitted. Estimates of natural
25 mercury emissions from degassing and volcanic eruptions

1 range from 2,700 to 6,000 metric tons of mercury per year.
2 The amount of mercury released to the atmosphere due to
3 human activities has been estimated at 3,000 metric tons
4 per year.

5 What we're talking about today is regulating some
6 of those anthropogenic mercury emissions. And what I
7 wanted to do was briefly go over the federal regulations
8 on mercury, which I had these nice slides from the
9 workgroup meeting presentation in June of '98 which are
10 from EPA.

11 But to summarize, the mercury -- there's a land
12 disposal restriction on mercury. And mercury, once it
13 goes into the hazardous waste regulatory system gets
14 classified as either above 260 or below 260 parts per
15 million. If it's above 260 parts per million which a
16 quite a bit of the waste that we're going to be talking
17 about regulating is, most of that waste ends up being
18 incinerated.

19 EPA passed a regulation back in the early
20 nineties and set up two regulatory structures. One is
21 called RMERC and one is called IMERC. IMERC is
22 incineration, RMERC is retorting or roasting. Because we
23 retorting or roasting costs more, waste that is
24 contaminated with organics mostly heads towards
25 incinerators now, resulting in a huge emission problem

1 from hazardous waste incinerators.

2 Now, we did recently move to regulate those
3 emissions, prior to this year, they were not regulated,
4 with max standards. And we did just recently settle a
5 consent degree on that, and I think some of our elemental
6 standards are 124 micrograms per dressing are in cubic
7 meters. So it's going to significantly reduce the amounts
8 of mercury coming out of hazardous waste incinerators but
9 not stop them altogether.

10 EPA is doing a lot of work right now at our
11 insistence on taking a look at what kinds of products
12 contain mercury, what kinds of consumer products contain
13 mercury. And actually if you go to our a web site which
14 is www.mercurypolicy.org you'll see a list there which
15 John Gilkinson from the Minnesota Office of Permit
16 assistance, I think is what they call it. It's basically
17 their DEP and regulatory agency in Minnesota has a rolling
18 list of all mercury bearing consumer products.

19 And he basically looks at that list every year
20 and he's constantly updating that list. So that's a very
21 important resource for the Department to have, because
22 we're talking about hundreds of products containing
23 mercury perhaps even thousands.

24 When I want to talk about now briefly is the
25 problem -- actually, the problem of mercury once it is

1 taken out of the stream of commerce. Because I recognize
2 that both nationally and internationally what's happening
3 with mercury is that if you go to buy mercury on the open
4 market right now, it sells for like a buck a pound. It's
5 basically waste, because we have too much of it. We have
6 a glut of mercury on the market.

7 So when we go to pull mercury out of consumer
8 products and we go to quote unquote "recycle it", actually
9 a lot of that stuff ends up either getting disposed of in
10 incinerators or it ends up going to third world countries.

11 And I'll give you a couple of examples. Kansas
12 had a household -- they had a mercury round up through
13 their household hazardous waste collection system a couple
14 of years ago. And one of the many conferences I've been
15 to on mercury, the regulator talked about how they had a
16 clock that was made with mercury as the weight in the
17 clock.

18 The clock had been in this church for 100 years.
19 And during this mercury collection, they collected the
20 mercury in the clock and did this huge public outreach
21 campaign in Kansas. They had mercury monster. They
22 collected mercury in the science labs. And the bottom
23 line is what happened to that mercury is that it went to
24 the cement kiln in Shawnee, Kansas and was burnt.

25 So you had mercury that was in a clock, a glass

1 clock, and it was taken out and it was burned and sprayed
2 into the environment, because this kiln didn't have any
3 type of mercury recovery.

4 Another point of my story, one of my many mercury
5 stories is that recently Maine because the Penobscot
6 Indian who were very upset that they could not eat the
7 fish in their rivers anymore, because of the mercury
8 contamination, the dioxin contamination, one of the 12
9 facilities in the country shut down, and they had a
10 mercury cell. So that the mercury in that mercury cell
11 had to be decommissioned. And so nobody wanted it here
12 because there's a glut of mercury on the market.

13 What they ended up doing was putting it on a ship
14 and shipping it to India where because of our
15 international contacts we were able to have the ship met
16 at the port and the dock workers refused to unload the
17 ship. But that ship was headed for India to make
18 thermometers that would have been imported back into this
19 country as thermometers.

20 So we really have this problem in this country as
21 well as internationally with mercury when it is pulled out
22 of the stream and what we're going to do with it.

23 Now, I know you heard testimony today from the
24 Dental association and the land manufacturers and there's
25 quite a few folks actually that have industries that use

1 mercury in products that aren't here represented and
2 haven't been represented very well in the whole scheme of
3 things.

4 But the issue of, if you're going to regulate
5 mercury, which I believe we need to, we need to regulate
6 mercury in the consumer products, because this mercury is
7 ending up either in the air or in landfills. And while we
8 haven't seen mercury in landfill leachate and would not
9 expect to see that leachate because it volatilizes.

10 Now, I know this is not the Waste Board, but a
11 couple years ago we did pass a federal regulation to max
12 standards on landfills, and all landfills now over a
13 certain size and age are supposed to have soil vapor
14 extraction systems on them, which is basically sticking a
15 straw in the landfill and sucking out the gases.

16 None of those -- most of those landfill gas
17 collection systems are just simply flare, just like soil
18 vapor extraction systems at Superfund sites, none of them
19 have any kind of controls for mercury.

20 Now, there are some estimates from EPA that say
21 that landfills, municipal solid waste landfills after all
22 the match standards are done on mercury, those landfills
23 are going to be the most significant source of mercury in
24 the environment, because of all the consumer products
25 including the lamps and other things that are being

1 disposed of, mercury bearing consumer products that are
2 being disposed of in landfills so it's a very significant
3 issue.

4 The State of California needs to divert as much
5 mercury bearing waste as it can possibly capture in the
6 universal waste rule or in other regulations out of
7 landfills and into either being completely recycled, which
8 some of the lamp manufacturers. We do have a lamp
9 recycling infrastructure in California that's better
10 developed than most other states.

11 So California actually has less of an excuse than
12 a lot of other states not to be recycling the lamps at
13 least.

14 But we still have this problem of when we start
15 pulling all off this mercury out of the stream of commerce
16 what's going to happen to it. Now, the Defense National
17 Stockpile Center which I have all these great slides from
18 a cool presentation that the Defense National Stockpile
19 Center did on their stockpiles.

20 There are mercury stock piles that the Department
21 of Defense keeps for the military, because of military
22 means, which they did not need the mercury anymore and
23 started selling it on the open market, which further drove
24 the price of mercury down.

25 Now, many of the states that are being impacted

1 by fish consumption advisories are asking the Department
2 of Defense or basically force the Department of Defense to
3 stop selling mercury. And one of the ideas that has been
4 bantered about and, in fact, we have a bill in Congress on
5 it, is to take all this excess mercury that we collect
6 from household hazardous waste collection programs, we
7 collect from Kansas and store it with the mercury
8 stockpiles until we can figure out -- as an interim
9 solution, until we can figure out a long-term mercury
10 stabilization program.

11 And right now, just so that you understand, there
12 really is no long-term strategy for mercury stabilization.
13 There are some technologies that are looking at a
14 amalgamation, some technologies that are looking at
15 different kinds of ceramic bonding. Most of these are
16 driven by the Department of Energy, but an interagency
17 task force that used to exist between EPA and DOE and DOD
18 lost funding a couple of years ago and has not been
19 reinstituted yet.

20 So the State of California because of its size,
21 because we're the seventh largest economy in the world and
22 because we have ten percent of the population of the
23 country, may want to think about what it's going to do or
24 what's going to happen ultimately to the mercury that we
25 collect, because it's not like, you know, we're Delaware

1 or we're, you know, Wyoming. We're a very, very large
2 part of the national picture.

3 We may want to think about, you know, supporting
4 these interim storage idea, although I had a cool slide
5 that showed you that all the sites are all east of the
6 Mississippi River. All of the storage sites Indiana,
7 Texas, Ohio, and New Jersey. So they're all on the east.
8 There's nothing here. I'll give you guys copies of this,
9 but there's nothing in the west at all.

10 So right now the mercury stored in steel flasks
11 and wooden pallets with metal catch trays is inspected and
12 has security measures in place as well as they are
13 monitoring the equipment. And they over pack it and
14 repack it as they have to.

15 I want to stress that the problem of long-term
16 mercury storage is really as challenging a problem as
17 long-term storage of nuclear waste. The country that's
18 most progressive on this issue is Sweden. And Sweden is
19 looking at subseabed disposal for their nuclear fuel rods,
20 and a deep geological repository similar to Yuka Mountain
21 for their mercury. It's very expensive. They're planning
22 to amalgamate it and put it into a deep geological
23 repository.

24 And they came to the conference I was at a couple
25 of years ago and were looking to the United States to help

1 them come up with a better idea, because the releases from
2 that repository were modeled to be too high. And we are
3 holding a conference which we're helping to organize this
4 next spring in New England, which is a conference on
5 mercury, stabilization and retirement and interim storage
6 solutions.

7 So I'm bringing to you a couple of different
8 opinions and a couple different problems. One the problem
9 of mercury and the body burdens that we're facing and the
10 potential health effects are enormous. I know that Lena,
11 my colleague from Clean Water Action talked about the most
12 recent exposure study we have is actually done by a
13 newspaper in Mobile Alabama, where I was just at a couple
14 of days ago actually, showed that, you know, exposures are
15 higher than we think they are.

16 Every time we go and look actual exposure data,
17 we go measure blood serum levels or we measure cord blood
18 or we, you know, take a look at body burden measurements
19 and tissue, we find shockingly that exposures are much
20 higher than are safe.

21 The CDC reports says that 60,000 children are
22 being born a year impaired from mercury exposure from
23 exposure in the womb. As, you know, we've been trying to
24 get a breast milk monitoring program in California. We
25 have no idea what the breast milk monitoring program would

1 say about mercury exposure, but we know because of its
2 broad concentration factor we certainly can find it, we
3 don't what levels that we'd find.

4 So the Air Board is moving under AB 25, the
5 Children's Environmental Protection Act to regulate
6 mercury more closely. We're cracking down on mercury
7 emissions from stationary sources of air pollution through
8 MAC standards. In fact, we recently won a very important
9 decision nationally on the standards saying that because
10 cement kilns, which are a major source of mercury,
11 probably one of the most major sources of stationary
12 emissions in California, because we do not have a lot of
13 coal fired power plants, are cement kilns, because they
14 burn large amounts of coal and they're burning limestone,
15 which has mercury trace elements in it.

16 And the when MAC standards for cement kilns were
17 promulgated, there was no standard promulgated at all for
18 mercury. We got the court in Washington D.C. The reverse
19 that and said that they had to regulate all HAPS from --
20 if a source was emitting a HAP, and you didn't regulate
21 it, you need to go back and regulate it. But this is
22 going to take a very long time obviously, but that's good
23 news.

24 So, in summary, we definitely support the
25 regulation on mercury bearing consumer products. How the

1 Department decides to regulate things like emissions to
2 POTWs, waste discharge POTWs, we really believe that
3 because the Waste Board is most involved in the collection
4 with household hazardous waste and because the water
5 boards are involved with discharges from POTWs that the
6 whole problem of mercury and mercury emissions into the
7 land, air and water in California would be a perfect
8 opportunity for an interagency task force.

9 It's the reason CalEPA was put together. It's
10 the ten year anniversary of CalEPA. It would be a
11 wonderful thing to see an interagency task force. Of
12 course, you know one of my first great loves in toxics is
13 persistent bioaccumulative toxins, but if you could start
14 with mercury I would be very happy.

15 And, you know, I would be happy to help, in any
16 way, to support that. And that as part of that, I think
17 California really needs to look at what it's going to do
18 with all this mercury. Right now there's a lot of mercury
19 that gets treated back and forth across the border.

20 One of the best looks that we have on a very
21 difficult topic is the whole issue of hazardous waste
22 transport going across borders. There's a Texas Policy
23 Center study under NAFTA that was recently done, and
24 there's also CDC report, the Commission on Environmental
25 Cooperation has a mercury action plan for Canada, United

1 States and Mexico. And it's done quite a bit of work in
2 looking at mercury going back and forth across the Mexican
3 border between United States and Mexico. And a lot of
4 that, of course, is the California border.

5 So there's a real opportunity there for
6 California to take a policy lead in looking at the export
7 and import of mercury trading and also taking a look at
8 interim storage.

9 With that, I thank you for the opportunity to
10 address you today. I might say a couple of things. I
11 wasn't here for all the presentations, but having fought
12 with the lamp manufacturing industry nationally and in
13 California for four years and having them say that they're
14 so interested in protecting the environment, I have to
15 sell you it made me gag, because we have been fighting to
16 get them to put a simple thing that says Hg on their lamps
17 letting consumers now that the lamps that are in their
18 homes, and are in their businesses contain mercury and
19 should not be broken and need to be recycled, and they
20 have been very uncooperative with that.

21 So it's very disingenuous for them to come to the
22 regulatory agency that is now trying to decide to regulate
23 them and say what great guys they are and how wonderful
24 they are about protecting the environment.

25 So all mercury bearing lamps need to be

1 regulated. I think the lamp industry needs to get on
2 board with this, because I know a lot of people who are
3 trying to protect public health and the environment are so
4 frustrated with them, we're basically in the position now
5 of trying to fund research on nonmercury bearing lamps,
6 because we simply cannot get them into the regulatory
7 system. We cannot stop them from, you know, burping and
8 spurting into the environment and people's home.

9 And mercury from the dental is a very significant
10 issue. There's new technologies coming along that I know
11 EPA is helping to work on that's going to be able trap
12 More and more mercury from waste water, and I think that's
13 a very significant issue especially when you're working on
14 fish consumptions advisories in basically all the major
15 waters in California, and some of that can be attributed,
16 of course, to dental amalgam and the fines.

17 So thanks very much.

18 DIRECTOR LOWRY: All right, thank you very much
19 for coming.

20 What I'd like to do next is move to the public
21 comment part of the program. And I have six speaker
22 request forms, one from Steve Arita and I understand you
23 don't need to comment.

24 And then the next person I can read his first
25 name David, and then Arrueta, A-r-r and then I can't read

1 the remaining.

2 MR. ARRUETA: Pass too.

3 DIRECTOR LOWRY: You're going to pass too, all
4 right. Robert Gillette is he here?

5 MR. GILLETTE: I am.

6 DIRECTOR LOWRY: All right, you'll be first
7 followed by Bud Hoekstra, is he here? All right.
8 Followed by Peter Weiner and Mr. Craig Johns will get the
9 last public word, and Jody Sparks if you'd like to comment
10 as well, you'll get the last word because you didn't fill
11 out one of these.

12 We're well within our expected or anticipated
13 time to close, but I would still urge you to make your
14 comments succinct, brief, and to the point, if you can do
15 all that.

16 So please start.

17 MR. GILLETTE: Is this on?

18 DIRECTORY LOWRY: Yes, it is.

19 MR. GILLETTE: Thank you. My name is Bob
20 Gillette and I'm here today representing the TRITAC as the
21 co-chair of the Land Committee. TRITAC is a California
22 based organization comprising members of public agencies
23 and other professionals responsible for wastewater
24 treatment.

25 TRITAC is an advisory group that recruits the

1 California Association Of Sanitation Agencies, the
2 California Water Environment Association and the League of
3 California Cities.

4 DIRECTOR LOWRY: Welcome.

5 MR. GILLETTE: Thank you. The constituency base
6 collective serves most of the seaward population of
7 California by treating and managing more than six million
8 dollars wet tons of biosolids or sewage sludge every year.
9 The vast majority of the tonnage of biosolids is currently
10 being beneficially recycled.

11 TRITAC shares the DTSC's concerns regarding the
12 problems of mercury contamination in California's
13 environment that is a part of the cause of the disposal of
14 mercury containing wastes that are currently regulated as
15 a hazardous wastes.

16 In fact, members of our association have been
17 very active in pushing for SB 633 and trying to help that
18 major problem with water pollution.

19 TRITAC also shares DTSC's support of pollution
20 prevention, recycling and promotion and the use of mercury
21 alternatives as methods of providing additional
22 environmental and public health safeguards for the
23 discharge of mercury.

24 The discharge of mercury to California's
25 environment from biosolids land applications is regulated

1 by the federal on 40 CFR 503 regulations and by the State
2 of California Title 22, the State Water Resources Control
3 Board sites specific requirements, and the State Water
4 Resources Control Board general order for land application
5 of biosolids recently adopted.

6 The risk assessment related to the environmental
7 exposure of mercury and biosolids measured in terms of
8 lifetime chronic exposure has been performed by the
9 Environmental Protection Agency during the development of
10 the 503 regulations. The 40 CFR 503 regulations were
11 developed over years of evaluation using risk assessment
12 methodologies developed by the U.S. EPA. These
13 methodologies focused on various potential pollutants and
14 14 pathways that might be used for human, animal and other
15 impacts on the environment.

16 Development of the 40 CFR 503 Regulations
17 involved an extensive review of individual pollutants and
18 the use of hazard indices and the assessment of the worst
19 case exposure conditions to develop numerical limits for
20 biosolids that would assure protection of public health
21 and the environment under proper management conditions.

22 In fact, the worst case condition for mercury was
23 assuming that a young child would, from the year of one
24 till the year of six consume a significant amount of
25 biosolids every day for that period of time, in addition

1 to other mercury contaminants over their lifetime.

2 Pursuant to the present 22 CCR and the DTSC uses
3 various adopted criteria to determine whether biosolids
4 are classified as hazardous waste. These include the
5 testing for toxicity, persistent and bioaccumulative toxic
6 substances ignitability, reactivity and proclivity.

7 Biosolids that contain a substance that exceeds
8 either a list of soluble threshold and the STLCs or a
9 listed threshold limit is deemed to be hazardous waste and
10 cannot be land refined.

11 Very few, only nine tons of it, in 1999,
12 according to DTSC's listing of the biosolids in
13 California -- of six million tons produced in California
14 were classified as hazardous. And, in fact, to my
15 knowledge none of that was classified as hazardous as a
16 result of mercury.

17 The State Water Resources Control Board's general
18 order added additional mitigation measures to protect
19 against potential impacts of heavy metal loading in
20 addition to those found in 40 CFR 503.

21 In determining that land applications of
22 biosolids is safe, the State Board developed a
23 comprehensive Environmental Impact Report on the general
24 order that reviewed not only the 40 CFR 503 regulations,
25 but substantial amounts of biosolids related to scientific

1 evidence and literature published since the adoption of
2 the 503 regulations.

3 The General order required that cumulative
4 loading limits for heavy metals, including mercury, at
5 land Application sites include the natural levels of heavy
6 metals that occur at the site before application of the
7 biosolids.

8 The inclusion of natural levels of heavy metals
9 that occur at the site tight before the application of
10 biosolids is not added into the cumulative metal load
11 calculations in 40 CFR 503.

12 If a biosolids products is considered hazardous
13 according to the California CCR, the general order would
14 also preclude its land application.

15 TRITAC is concerned that the State of California
16 would experience and extreme burden on Class 1 landfill
17 capacity at an warranted cost if DTSC regulates all
18 mercury containing wastes, including biosolids, maneurs,
19 municipal solid wastes, rain waste, et cetera as hazardous
20 as proposed in the October 2001 draft mercury report.

21 TRITAC has strongly and consistently supported
22 the development of regulations based on sound science. As
23 such, DTSC supports your option number 4, which would
24 require the development of new hazardous waste regulatory
25 threshold members.

1 This option would require DTSC to develop new
2 regulatory thresholds, based on the current science. As
3 such, the basis of current thresholds, the STLC, the TTLC
4 would need to be reexamined.

5 TRITAC recommends that since 1984 the science has
6 become more sophisticated in determining cleanup levels
7 and public health goals for mercury by using modeling and
8 risk assessments. TRITAC agrees that in devising
9 appropriate waste reuse and disposal scenarios to develop
10 a new regulatory threshold would be subject to a lengthy
11 debate and controversy. But the development of a science
12 based threshold for mercury would be the appropriate
13 regulatory approach.

14 DTSC should not back away from determining an
15 appropriate or long-term management scenario just because
16 it may become subject to lengthy debate and controversy.

17 It is only through the development of an
18 appropriate threshold number for mercury that DTSC can
19 defensively address mercury emissions originating from
20 waste.

21 Such an approach would not delay promotion of
22 mercury recycling and pollution. Such programs can be
23 implemented concurrently and with a threshold development
24 under Option number 4.

25 While option number 4 is the best option for

1 management of mercury containing waste, TRITAC recommends
2 that Option 3, the regulation of all mercury containing
3 consumer products, when they are discarded as hazardous
4 waste, should be employed to deal with products to which
5 mercury was intentionally added.

6 Option 3 is the right approach for many products
7 where mercury testing is difficult or unnecessary due to
8 high mercury content. These products should be named as
9 listed hazardous wastes when discarded. Since they are
10 listed wastes, it should be made clear that they must be
11 removed from a larger product in vehicles if that larger
12 product is not being managed as a hazardous waste.

13 And we have developed some detailed
14 recommendations for the implementation of option number 3
15 that would provide it in writing.

16 With that, we'd be happy to help in any way that
17 we can, with information or data. Please feel free to
18 contact us if we can help.

19 DIRECTOR LOWRY: All right. Thank you very much
20 for coming, and thank you for submitting your detailed
21 recommendations as well.

22 All right we have Bud Hoekstra. Did I pronounce
23 your name right, sir?

24 MR. HOEKSTRA: Yes you did. You did very well,
25 thank you.

1 Thank you very much. I'd like to say at least
2 pass along a compliment about this report. I've read
3 about a thousand reports in the last 20 years and this
4 probably ranks in the upper ten. It was a very excellent
5 job. I do appreciate the open access.

6 At home I have a -- on my personal library shelf,
7 I have a formulary and price list from the drug companies
8 Squib. It's dated 1906. It has four pages of mercury
9 compounds that were used as medicines, including one
10 popular children's tonic that contains strychnine, lead,
11 mercury and a couple other dangerous compounds.

12 But there is no mention of methyl mercury. And
13 methyl mercury is rather new to the environment. It's
14 something that we've actually created by creating these
15 reservoirs, which are huge biomethylators just hugh
16 methylation vats.

17 And methyl mercury is a different species. It's
18 found like any other species of mercury. And there is
19 some important things about methyl mercury that I'd like
20 you to address.

21 I want to point out that methyl mercury is fetal
22 toxic. And fetal toxicity is something new to the world
23 of toxicology. And it's not covered very well in the risk
24 assessment that was handed to you by the OEHHA.

25 And I want to point out that there -- that the

1 RFD, the reference dose that's discussed in here is not
2 one that's accepted by most of the scientific community.
3 The Reference Dose in here is 0.1 micrograms per kilogram
4 per day, which is basically one hundred thousandths. And
5 I want that figure to stick in your mind once.

6 In 1993 -- let me step back once where that 0.1
7 that one hundred thousandths come from. In '89, the EPA
8 set that figure at 0.3 or three hundred thousandths and
9 there was big outcry about that.

10 In '97, it was set at 0.1, which is one hundred
11 thousandths, and there was an outcry about that in the
12 scientific community.

13 And so the National Research Council was asked to
14 see if that was scientifically justifiable, not that it
15 was the best science or that it was the best RFD, but it
16 was whether it was justifiable.

17 And in 2000, they let it squeak through. But
18 there was a lot of malcontent with that figure in the
19 scientific community.

20 In 1993, for example, in the peer review
21 literature, Stern took a look at animal and human studies
22 and they looked at the same studies that came -- that the
23 EPA used, the Iraqi studies to come up with their one
24 hundred thousandths, and they set the figure at 70
25 thousandths, which was much lower.

1 Gilbert and Grant Webster in 1995 looked at the
2 same Iraqi studies and came up with a range of possible
3 RFD's between 25 thousandths and 60 thousandths. Mind
4 you, the EPA uses 100 thousandths and this is what you use
5 in here.

6 In 1996 -- excuse me 1995, Zilcof studied
7 prenatal exposures in animals, and he came up with an RFP
8 of 10 thousandths. Mind you the EPA uses 100 thousandths.

9 In 1996, RICE came out with using animal data
10 with 50 thousandths. That's half of what's used in here.
11 And, in general, the scientific Community does not agree
12 with that RFD. And there are some reasons for it.

13 The issue is the toxicity to the fetus. There's
14 hardly any chemical known which can be as toxic as methyl
15 mercury. There is now conceded by the toxicology
16 community that a mother can ingest an exposure to methyl
17 mercury and show no signs of mercury poisoning. And the
18 fetus, when it develops, can show signs of severe mercury
19 poisoning from that same maternal exposure.

20 And so you're dealing with a very unusual species
21 here with methyl mercury. And the idea is to control this
22 from affecting the larger population. Now, the fetus
23 probably something that's not of -- you know, there's
24 nobody in this room here that is carrying that organ, but
25 it is of concern to the larger society, since everyone

1 here in this room starts out as a fetus.

2 So it doesn't matter. And if the risk
3 assessments are wrong, and there's a good chance that they
4 are, there's other implications here for methyl mercury in
5 the environment and the exposure. For instance, legacy
6 sources of mercury, most of those legacy sources are not
7 covered in here.

8 Legacy sources are basically exempt by law as
9 hazardous waste. And we'd ask you to take a look at a
10 national forest, like Tahoe national forest whether
11 there's thousands of these old historical mining sites
12 with mercury that are exempt. You wonder whether this
13 plan will work to control that methyl mercury that problem
14 that we're now experiencing.

15 In fact, I'll go as far as to that methyl mercury
16 may be Anthrax that we strip we all future generations.
17 And I have my doubts whether this plan, this strategy here
18 will actually work to control that.

19 I wanted to throw one other matter before you.
20 I've heard the California Dental Association speak. I
21 suggest that you take a look at the national clearing
22 house for mercury amalgams. I think you can find on the
23 Internet, but they do put out a newsletter. And one of
24 their claims is that the ADA, the American Dental
25 Association, gets royalties from the mercury containing

1 amalgams.

2 And you might also run just a quick literature
3 check on some of the studies that come out on dentists'
4 exposures to amalgams. You know, it's one huge study of
5 several thousands people in China, that is a dentist in
6 China that showed quite a few side effects from exposure
7 to amalgam vapors, particularly the loss of short-term
8 memory.

9 Thank you very much.

10 DIRECTOR LOWRY: All right, thank you for sharing
11 those thoughts with us, and thank you for coming down from
12 San Andreas, I guess.

13 Peter Weiner is next on the list.

14 MR. WEINER: Thank you. I, too, want to
15 congratulate the Department on one of the best studies I
16 have ever seen come out of the department.

17 I have a few isolated things to say or disjointed
18 things to say responding to the things that other people
19 have said today.

20 I guess the first thing to talk about is what the
21 Department can do and not do. The fact that the
22 Department cannot control the entire mercury problem is
23 obviously not a reason not to take action.

24 There is a statutory level exemption in
25 California, which may be unfortunate, but there is one.

1 And the Department doesn't have some of the powers and
2 some of the other CalEPA agencies do have.

3 And while an interagency task force might be the
4 wonderful thing to come out of the Department's efforts,
5 it is no reason for the department to slow down. I think
6 to the contrary, the testimony you heard from other
7 agencies is full speed ahead, because it assists them,
8 especially with the Water Board, in controlling ongoing
9 contributions of mercury into the environment.

10 The second thing I wanted to say is that dirt is
11 an obvious issues, dirt and biosolids coming out of this
12 discussion today. And it poses more problems I think,
13 than consumer products or other areas where we have
14 intentionally added mercury.

15 In looking at that, and I think it will take the
16 Department more time to look at dirt, contaminated soils
17 issues and biosolids than it does to look at some of the
18 other issues. I would like to say that I think Mr. Jones
19 tried to correct himself after his first testimony to say
20 that one looks not only at human health issues in setting
21 a cleanup level but at ecological issues.

22 And clearly if there is a prospect for erosion as
23 he put it or other contributions to water, are the fact
24 that we have elemental mercury in the land doesn't mean it
25 won't convert to methyl mercury later on. That's been the

1 whole problem.

2 So I understand his financial concern about ARARs
3 but nevertheless, as you set your limits at some point,
4 one would suspect that you're going to do more data
5 analysis as to what the contribution of soils are to the
6 actual problems you're trying to solve.

7 Similarly, when Mr. Mumley was talking about
8 there being a difference in his concerns for TMDLs versus
9 your concerns of what's hazardous and hotspots.
10 Obviously, you're changing those regulations to address
11 contributions that might violate the TMDL or water quality
12 objectives that Mr. Howard was talking about is what's
13 important here, not what you regulate at the present.

14 Moving on. There was some talk about encouraging
15 source reduction. I think that as one of the witnesses
16 showed you in a demonstration, technology such as -- it's
17 only one of the technologies, such as that very slim
18 fluorescent tube, that T-5, which substitutes for the
19 light of two of those larger tubes, is one great way to
20 obtain source reductions since you're cutting the amount
21 of mercury virtually in half.

22 These issues are terrific. They're probably not
23 ones that are within the purview of the Department to
24 promote, in that sense, because as many of the speakers
25 have said any level of the mercury is going to be

1 hazardous relative to the .2 micrograms per liter, I
2 believe, of the water quality objective in sediments, and
3 17 parts per trillion water quality objective that the
4 Water Board was talking about.

5 So whatever kinds source reduction and energy
6 efficiency that we can provide through fluorescent lamp
7 encouragement, so as to cut down on other emissions of
8 mercury from powerplants and so on, is probably something
9 that will be encouraged hopefully by the Energy Commission
10 and other authorities. This department's authority and
11 mandate is to protect human health and here especially,
12 the environment.

13 I was taken by two things. One was the hazardous
14 waste identification options table 6.1 on pages 92 and 93
15 and then by the very cogent testimony from the
16 representative from TRITAC.

17 In going down the waste characterization issues
18 of several of the these waste types, the Department says
19 the characterization issue is that mercury is quote
20 "diluted" unquote when the weight of the whole object is
21 considered.

22 Well, it seems to me that this is something that
23 we thought we were going to get away with -- getaway from
24 a long time ago when we said that solutions really -- or
25 dilution was not the solution to pollutants. Here we have

1 instances where because of the Department's way of
2 characterizing concentrations, you've allowed just that.
3 It seems to be a relatively simple idea to regulate all
4 consumer products which intentionally add mercury.

5 The rather detailed presentation or detailed
6 recommendations for Option 3 that TRITAC presented seems
7 to me to be a fairly decent discussion of these items,
8 because the issues that you raised in here about
9 measurement devices, such as barometers and manometers,
10 the switches in automobiles, that switches appliances and
11 lamps are all items that can be easily segregated from the
12 rest of the waste stream.

13 And I say easily, because it isn't, for example,
14 like mercury painted the wood. It's hard to separate the
15 wood from the mercury paint. It's a lot easier to
16 separate a switch. That's a lot easier to separate a
17 lamp.

18 These issues don't present issue, but
19 feasibility. And, I must say, that what you do is enable
20 you to reduce the load on POTW which reduce the load on
21 sediments in the bay in a way that you can look at either
22 over time or immediately with modeling to determine
23 whether that will do the trick. For example, to reduce
24 the mercury in biosolids so sufficiently, so that you do
25 or don't have to regulate them. Those are the kinds of

1 issues that you can deal with once you address these more
2 concentrated sources.

3 While looking at the issue, you also don't get
4 into the itch you of zero. I think there is probably an
5 issue of zero connected with soils and biosolids that
6 isn't there for consumer products, where there's been
7 pretty fairly good unanimity today that those are things
8 that need to be diverted from contributions to the
9 environment.

10 That's all I have and thank you very much.

11 DIRECTOR LOWRY: All right. Thank you for
12 sharing your thoughts.

13 Craig Johns, I think, is next, Executive Director
14 of Partnership for Sound Science and Environmental Policy.
15 And we're honored to have him as a former chairman of the
16 San Francisco Bay Regional Water Quality Control Board.

17 Welcome.

18 MR. JOHNS: Thank you very much, Mr. Director.

19 The Partnership for Sound Science and
20 Environmental Policy is an association of municipal
21 treatment agencies, businesses, trade and labor groups
22 throughout the State, which supports the development of
23 environmental policies that are based on sound science and
24 reasonable regulatory approaches.

25 I'd like to add our voice to the seemingly

1 growing list of folks who read this report and were
2 impressed by it. I think it is a very interesting and
3 impressive step in trying to understand the life cycle
4 dilemma of mercury in this State.

5 I was struck by a couple of the factoids that I
6 pulled out in reading it the other day. One of which was
7 that domestic mercury consumption has been reduced
8 eight -- more than -- almost 82 percent from 1976 to 1998,
9 and that landfill disposal of mercury has also been
10 reduced some 61 percent from 1990 through 1996.

11 It seemed in reading this report that what one
12 was struck with is that we're hear talking about it
13 because of the bioaccumulative nature of mercury and some
14 of the fish advisories that have come throughout the State
15 and indeed the rest of the country. And truly I think as
16 the report points out, but really doesn't go into enough
17 detail on it and I would hope that the final draft will do
18 so, the real problem with mercury eroding into our waters
19 does not come from the landfill leaching, from aerial
20 deposition, although clearly there is that, it's from
21 these legacy sources from these abandoned mines.

22 And as I mentioned, the report does go into it a
23 little bit, but it doesn't really go into it in the kind
24 of detail, I think, that's warranted for a comprehensive
25 report on mercury.

1 One of the comments I think Ms. Williams made was
2 that this particular pollutant in this multimedia aspect
3 cries out for an interagency task force, and I certainly
4 would echo that and support that.

5 There's no way to deal with the mercury in the
6 different media, whether it's through TMDL or through your
7 jurisdiction authorities or the Air Board or the Waste
8 Board, without coming together to try to deal with this
9 problem.

10 So I would hope and recommend that the final
11 draft -- or excuse me the final report in this particular
12 instance goes into more detail about the legacy
13 contributions throughout the State.

14 And then more importantly have an option that
15 goes to try to deal with that. I recognize that that has
16 nothing to do with your immediate standard setting
17 jurisdiction, but I believe that the Department is
18 involved in many dozen mine cleanups throughout the State,
19 where I presume mercury is one of the prime, if not the
20 sole contaminants.

21 And it seems to me that there ought to be some
22 connection between that area of the Department's
23 jurisdiction and this whole multimedia approach, and would
24 think that this report should do that.

25 Finally, if this is to be used and relied on by

1 folks as a good planning tool for the future, a policy
2 development tool, it seems that an estimate of the various
3 costs associated with these various options that are
4 presented here, particularly the one that's recommended as
5 the prime option for this draft report, needs to be dealt
6 with, so that local municipal governments, whether they're
7 sewage treatment facilities and agencies or folks dealing
8 with stormwater issues and mercury that's in the
9 stormwater, have an idea of what it's going to cost and
10 what kind of benefit is going to be achieved.

11 And with that, I thank you very much for the
12 opportunity to comment on the report.

13 DIRECTOR LOWRY: All right, thank you for coming,
14 and thank you for your comments.

15 Next we have Jody Sparks.

16 Who do you represent today?

17 MS. SPARKS: I'll tell you. I'm representing the
18 Toxics Assessment Group. As the President of the Toxics
19 Assessment Group and the Executive Director of the
20 California Environmental Research Group, which is a
21 nonprofit organization.

22 I just have two comments. First of all, there
23 was discussion among both the regulatory agencies that
24 were present and the business community on making
25 information available to you. For instance, one example

1 would be information regarding municipal landfills and if
2 they leak or don't leak.

3 Well, the concern that I have is that unless you
4 prepare a docket, of sorts, on the information that's
5 submitted, some will not have the opportunity to rebut the
6 arguments that are made. And so I think a docket similar
7 to, I hate to use the term, but we sort of had on our
8 issue, would be something that would be helpful.

9 DIRECTOR LOWRY: All right.

10 MS. SPARKS: And secondly, I had commented
11 previously on the universal waste rule when it discussed
12 fluorescent bulbs. And there was a document that normally
13 isn't part of the public record, it's like an economic
14 analysis. It's sort of separate. And this was like the
15 first part of the year.

16 And I recall a product endorsement. And I would
17 hope that as you go through this process, that you do not
18 endorse products by name. I don't believe that the
19 Department should be in that business.

20 DIRECTOR LOWRY: All right. So your point is
21 that when we did the universal waste rule, this Department
22 enforced a particular commercial product?

23 MS. SPARKS: I believe so.

24 DIRECTOR LOWRY: All right.

25 MS. SPARKS: That's the end.

1 DIRECTOR LOWRY: All right. Thank you very much,
2 and your docket comment is particularly appropriate.

3 What I'd like to do now is, is there anyone else
4 who would like to address the group?

5 And seeing no one, let me do a couple things.
6 First, I'd like to thank everyone for coming and
7 particularly I'd like to thank our reporter, and staff
8 including Diane Fowler who didn't get thanked earlier, but
9 you are one of the major laborers for getting information
10 out to get people here and putting things together.

11 And Corey Yep for writing the report, which has
12 been subject to such praise today. And Watson for sitting
13 next to me and passing notes and kicking me at appropriate
14 points.

15 Let me also say a couple of things that we will
16 do. We have scheduled additional public workshops on
17 this, which will follow a similar format. I have not
18 committed to being at those particular workshops. I may
19 go. I may not. It was my hope that we would get the bulk
20 of the comments here, but we still want comments from
21 other folks who were unable to come to Sacramento.

22 Those of you are who attended today, I should
23 assure that you you're welcome to come to these other
24 workshops, but you need not be there, if you don't want to
25 come. And the later workshops will not be an example of

1 they get the last word and you don't. All comments will
2 be taken in an equal fashion.

3 What I like about this format is that it tries to
4 obviate the propensity of government to decide, announce
5 and defend what we are attempting to do in this process,
6 which is to say we have a problem, what do you goes think
7 of this proposed solution, and put that together.

8 And then based on those comments have a formal
9 regulatory process which we hope will also not be a
10 decide, announce, defend, but it will be a true regulatory
11 process where we propose the regulation, take comments,
12 respond to those comments as appropriate, if in deed we
13 elect to go the regulatory route.

14 I have learned a lot today. I think the comments
15 we received have been very, very valuable. The
16 interchange I've had with people at the break and with
17 additional staff here is, I think, we confirmed that a lot
18 of ideas have been discussed and some weaknesses in our
19 draft have been noted, some strengths have been noted and
20 some additional proposed solutions have come forward.

21 So thank you very very much for engaging in this
22 process. I know it's not pleasant to spend a day in an
23 auditorium without a clock and without windows. Sometimes
24 we have to do that. And I look forward to everyone's help
25 in addressing this problem as we go forward.

1 Once again thank you, and we'll see you next
2 time.

3 (Thereupon the Department of Toxic
4 Substances Control workshop was
5 concluded at 4:20 p.m.)

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1 CERTIFICATE OF REPORTER

2 I, JAMES F. PETERS, a Certified Shorthand
3 Reporter of the State of California, and Registered
4 Professional Reporter, do hereby certify:

5 That I am a disinterested person herein; that the
6 foregoing Department of Toxic Substances Control workshop
7 was reported in shorthand by me, James F. Peters, a
8 Certified Shorthand Reporter of the State of California,
9 and thereafter transcribed into typewriting.

10 I further certify that I am not of counsel or
11 attorney for any of the parties to said workshop nor in
12 any way interested in the outcome of said workshop.

13 IN WITNESS WHEREOF, I have hereunto set my hand
14 this 6th day of December, 2001.

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23 JAMES F. PETERS, CSR, RPR

24 Certified Shorthand Reporter

25 License No. 10063

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